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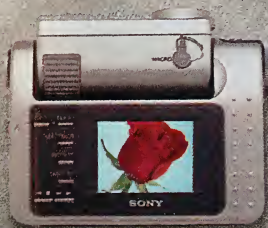


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Yup, your Mac's heart
beats fast and wide.

APRIL 1997

Mac ADDICT 8

highlights

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Apple bought NeXT. Steve Jobs is back. What the heck does it all mean? Here's where to find out more about the future of the Mac. **BY DAVID REYNOLDS**

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We probably shouldn't let you in on these five tricks—after all, it's hard enough to stay away from Bryce 2 as it is. But here they are—five secrets that will keep your creative juices flowing. **BY STEVEN ANZOVIN AND RAF ANZOVIN**

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how to

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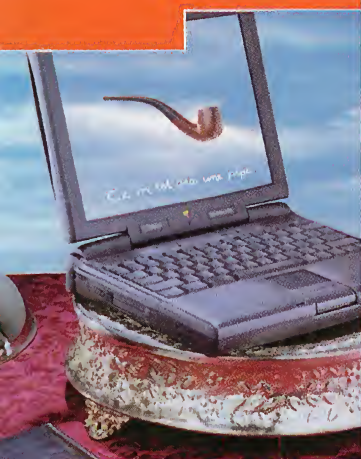
Parts and containers and stationary and editors and viewers got you down? Cheer up, Bucky, here's our hands-on guide to using OpenDoc.

88 Speed Web Access

Take advantage of the bits of wisdom we've collected over the past few months to make your Web site faster, snazzier, and all-around better.



Whatta view! Steve and Raf recreate
the ordinary vista seen from their
living room in Amherst, Mass.
Who knew?



Mmmm. Finger-lickin' good!
Just wait for dessert!



There's life left in that old
Mac II yet. Find out what
you can do to keep this
Mac alive and kicking.



The Next Apple was
designed by associate
art director Adam
Vanderhooft and rendered
by Olivier Wolfson.

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SOUL, IT FIGHTS COURAGEOUSLY
THROUGHOUT THE COUNTRYSIDE,
BRINGING JOY TO THE
PEOPLE AND MAKING
THEIR LIVES BETTER..."



Better not shine a
light down *that*
crevasse, buddy.

every month

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Scads of great demos, shareware, and freeware, stunning videos, awesome music, a hidden contest, throbbing eggs, and more. And, hooray, hooray, you can now pick any browser to access the Web from The Disc.

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Trying to find your way around the Big Apple's Web site? The company's online branch may have gone to seed, but our guide helps you get to the core.

Mac ADDICT

EDITORIAL

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Hey Cheryl, a) how do you "pop" a Pop-tart? —Just wonderin'; b) we're not up to anything. You're just paranoid. Ken & Adam rock. Brian, get away from our stuff already.



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editor's note

When you're good, you're good. When you're too good, you're bought.

I'm afraid we have a bit of bad news. This is the last issue of *MacAddict* as you know it. Before you go dashing off to write us a nasty letter, let us explain. It's not that we weren't doing a good job or that you weren't happy with us. On the contrary, we were doing too well. So well, in fact, that old Billy Boy started to get really nervous about *MacAddict*. Well, not about

MacAddict per se, but about the fact that there's a large group of people dedicated to the Mac and to Apple—and *not* to Windows and Microsoft. So, Bill, of course, set upon stomping out the resistance. What does Bill do best? Why, he buys things!

Bill made our parent company, Imagine Publishing, an offer it couldn't refuse. We're talking Big Bucks here. And this being a '90s corporation, we sold out. (A special note to those of you who suggested that we were secretly working for Bill because we put Internet Explorer on The Disc: You were right!)

Naturally, now that our souls belong to Bill (oops, Mr. Gates, sir) we're going to tweak the focus of the magazine just a tad. Starting next issue, we're changing our name to *WinAddict*, we're going to run lots of articles that, say, compare word processors or tell you how to perform SQL queries with your company database, and we're going to introduce a whole slew of bugs in The Disc. We'll also have to tone down our covers and dry up our humor. Expect future editorials to concentrate on Apple's dismal future. We'll change our mascot Max's name to Windy and we'll even try to convince you that Bill Gates is super-cool.

Except for Kathy Tafel, the only one among us who has any morals whatsoever, the rest of the *MacAddict* team is sticking with the new magazine. As I type this, David is busy learning the joys of device drivers as he tries to install a video card into his Windows PC, Judy is wandering around chanting repeatedly, "It's the words that count, not the platform." Nikki and Dan are trying to figure out how they can get raises out of all of this, and Mark and Wade are already deep into the guts of DOS. "Screw icons," says Mark, "I'm sick of making them anyway." Adds Wade, "It's about time everyone around here had to memorize a bunch of inane commands. Real men work harder, not smarter."

Naturally, Ken and Adam will continue to produce the magazine on Macs. No art department in the world uses Windows-based PCs to do design and page layout—not the one at *PC World*, not the one at *PC Computing*, not the one at *PC Magazine*, and not even the one at *boot*.

April fools! (Ha!) Did we get you? Microsoft didn't really buy *MacAddict*. But the scary thing is that it *could* just like it could buy any number of companies or products. And it's only when you envision how a large corporation's actions might affect you—and how helpless you might be to stop it—can you begin to understand why Microsoft evokes such strong passion in Mac addicts.

But, we're not helpless. There's a strong, smart, and very vocal contingent of Mac enthusiasts (you) out there, and as long as that continues, the Mac is not going to die, nor is *MacAddict* going away. So keep up the good work because when Apple delivers its kick-butt operating system, Rhapsody, on time next year, it will be we Mac addicts who have the last laugh. And that's no April fool's joke. —Cheryl England

Here are a couple of things you should note from our past issues:

- Yes, the custom-painted Mac was returned. Kudos to our contest entrant.
- On the February 1997 disc, we mistakenly included a font called Dingos. Dingos was designed as a premium that Three Islands Press gave away to Web surfers who filled out an online survey. If you used and liked Dingos, we'd appreciate it if you would take a few seconds to fill out Three Islands Press' survey at <http://www.3ip.com/type.html>.
- If you tried to contact our customer service department during this past winter and found yourself the victim of long holds on the phone or slow response to e-mail messages or faxes, our apologies. By the time you read this, we should have corrected many of the problems that were causing the slowdowns and you should experience reasonable response times. Rest assured, we'll continue tweaking our process to make our response time even quicker.
- If you need a replacement *MacAddict* disc or issue and you send us an e-mail or fax, please be sure to include your full name, full mailing address, and information on exactly which issue or disc you need replaced, and why. Our e-mail address is subscribe@macaddict.com and our fax number is 415-656-2486. You'll receive an automated reply to e-mail messages but not to faxes. Note that replacements take up to three weeks from the time we receive your information until the new stuff arrives in your mailbox.
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- Again, here's how to contact us: phone 415-468-2500; fax 415-656-2486; e-mail subscribe@macaddict.com.

Updater's: The Mac is back, a disc error, and how to reach us

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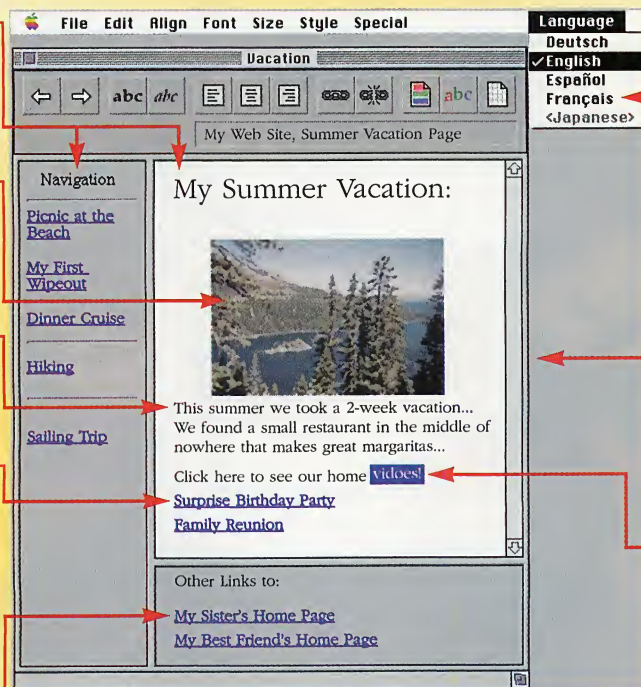
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Letters

We write. You read. You write. We answer. What a wonderful relationship.

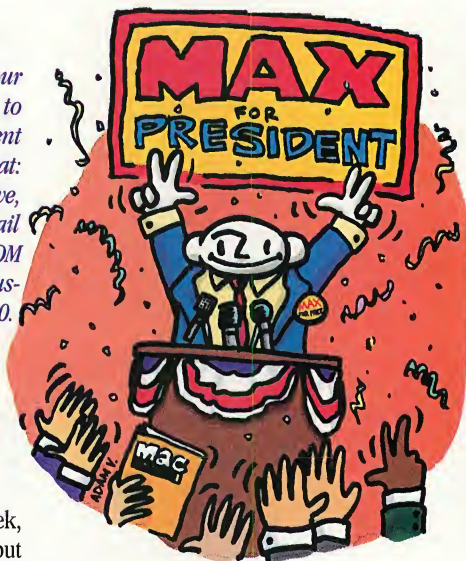
This Month

We love your stories, your comments, your jokes. We only wish we had more space to run all of your marriage proposals, indulgent praise, and sensitive criticism. Write to us at: MacDudes, MacAddict, 150 North Hill Drive, Suite 40, Brisbane, CA 94005, or send e-mail to <letters@macaddict.com>. For CD-ROM or subscription queries, please call our customer service department at 415-468-2500.

OH, GREAT

Your little thumbs up guy looks a lot like Ross Perot. —NEIL GIESMANN

Not only am I a techno-geek, Mac-Freek, but I am also a Bio-geek. I couldn't help but notice that you are using a cockroach as an icon for a bug. BBBZZZ, wrong answer. Cockroaches are not bugs, they are orthopterans, the same order as grasshoppers and crickets. I would suggest, to be biologically correct, that you cruise through the *Peterson Field Guide—Insects* or surf the Net for an insect page (there are several) and find a



picture of some true bugs for your bug icon. Just for the record, true bugs are the order hemiptera. I have a few suggestions of bugs you might want to find: stink bug, assassin bug, and ambush bug. I know these particular bugs won't be as familiar to people as a cockroach, but I think their names are quite fitting for your purpose. —KEVIN JOHNSON

YES

Have I been in the "Letters" section yet? —ED BROWN, BOLINGBROOK, IL

I am about to buy one of those sexy little Performa 6400s. Three weeks after I get it, is there going to be something better that I will wish I had waited for? —AMY SMITH

You know the little icons of a disc that say "Find A Demo of...on The Disc"? Well, could put one next to a picture of the new PowerBook 1400 and include a demo model with my next issue? —SEAN SULLIVAN
You're in luck! Check out page 26!

YOU MEAN THERE ARE MORE OF YOU?

This is in response to Paul's letter about how he thinks he likes rats. Paul! You are one of us! Come to us! We will clone, as a band of rat lovers should! It is OK to have a liking for

rats! They are wonderful, fabulous, fantastic animals! Actually, they are so wonderful that they whoop hamsters' butts just as much as the Mac whoops the PC. —SARA ULSHER

No! No! Not That!

If you guys name one more CD MacAddict, I may be forced to kill you... Those of us who use disk catalogers are going to come to your house, tie you down, and make you watch as we slowly erase every one of your preference files. —PATRICK KELLY

Geez, okay, we give. Starting this month, we're giving each disc its own special name. Now stop complaining.

OH, YOU WANT INFORMATION?

First, I would like to say pneumonoultramicroscopicsilicovolcanoconiosis, but I can't... it hurts too much. Second, I would like to enquire about your "MacAddict World News" article (Jan/97, p61).

Under Marketing Genius, are we supposed to be able to read this, or are we just going to have to wait to get Hancock's telepathic powers, or did you forget to put the pic behind the text box?

Enquiring minds want to know! —D. BYRON TEICHROEW

Oops! Here you go: "Macs will make significant inroads into China with Motorola clones and the new Apple input solution. •Apple will let all schools upgrade to MacTCP 2.0.6 for free. •People in Ohio will quit calling Macs "Apples." •The PowerPC Platform (PPCP) acronym will be dropped in favor of the steadfast CHRP. •Power Computing will release a popular coffee-table book of its ad campaign."

I like the way you predicted Gil Amelio would be on the cover of *Forbes*. So... can you tell me when my back-ordered Performa 6400 will arrive? —BRUCE DOIG
Geez, we're not God.

THE WAY WE WERE...

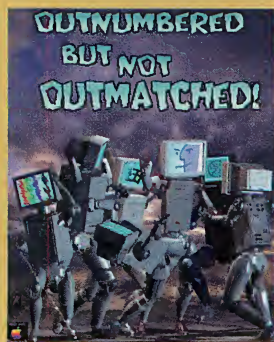
My most memorable Apple surprise happened over three years ago when I bought a



GET ON, GET ACTIVE. Talk to us and talk to other MacAddicts on the Web site.

RECENTLY SIGHTED WAR IS HELL

Tired of the Mac-bashing he's been exposed to recently, Daniel Miller dreamed up this image of a lone Mac beating back the enemy. Although we doubt you'll actually catch this battle in your neighborhood anytime soon, it is kind of nice to imagine a world where the tough-guy Mac is a hero.



Daniel brought his vision to life with Fractal Design's Ray Dream Studio and Adobe Photoshop. It will soon be posted on a Ray Dream users forum at <<http://www.dram.org/rd/rdnewsub/html>>.

Performa 550 (big mistake). I finally got around to filling in the registration card a few days later and after cringing in preparation to lick that disgusting glue seal, I was pleasantly shocked at the sweet taste of apples. How ironic that one of Apple Computer's most brilliant actions was putting apple-flavored glue on the seal of a Performa registration card. —KRIS '33MHz 030' THOLE

THE NOSE KNOWS

I just received the January '97 issue and it doesn't SMELL like the other ones. Did they run out of Downy fabric softener? —CORBETT ENDERS

Get this—you're right about the smell. Seems they switched to the unscented Downy! (Yes, we're serious.)

NUTCASES!

Hee, hee...hello there, MacAddict gurus...here I am, in a dark corner, the light from my 14-inch Apple monitor glaring upon my face's features...I have been here for a month now...my December issue, well...hee, hee...it never came. My only contact to the outside world... my trusty Quadra. My only sustenance... pages from PC magazines (the ink, ever so tasty)...and a hose connected to an outside faucet. Aye, the corner is dark and cold...but so is life without MacAddict...hee, hee...no reviews, no contests, no free CD...my life is but a hole...the day my January issue arrives will be my



awakening...but until then...hee, hee...the dark seems awfully nice. —RYAN BRUELS, FROM THE CORNER

My CD-ROM IS CRACKED! The perky pick-me-up icons aren't there! The secret contest spot, the cool shareware, the neato icon picture in the window, THEY ARE GONE! ALL GONE! WHAT SHALL I DO?! I waited by the mailbox all week when the mail came to see if the mag was here yet, and

when it finally arrived, I looked it over: the magazine, the CD...OH NO! It's cracked! WHAT SHALL I DO! My life as I know it is over! AHHHHH! HELP ME HELP ME HELP ME HELP ME HELP ME HELP ME HELP ME HELP ME HELP ME HELP ME HELP ME HELP ME HELP ME HELP ME HELP ME

HELP ME —JOHN WILLIS, SAN DIEGO, CA

THANKS FOR THE TIP

I came across a newspaper article from *The Columbian* that made me smile and I think that you will appreciate it. The article talks about a woman who was sent to a state hospital for evaluation after she had been charged with attempting to stab her husband to death. (Obviously this is not the part that made me smile.) When deputies were called to the scene she threatened to kill one of them, then later told him that the secret of life "was the legalization of marijuana and the use of Macintosh computers." Perhaps this is what Apple has been waiting for: an ad campaign promoting Macs as the secret of life, although I don't think the connection with drugs would go down very well. —JANE LEONARD

Man, oh man! Whatever you do, don't eat something greasy...and then decide to read your MacAddict. Ink smears like Tammy Faye's eye makeup. I just smeared page 8 of the January issue. Oh well, nothing better to gripe about at 2:02 a.m. —LAURA, NEW YORK, NY

CODE NAME: CLEVER

I went to Best Buy yesterday (the place that has the largest selection of Macs in my neighborhood) and found the Performa 6400/200 unlocked so I opened the At Ease Setup control panel and found that the password was "family-macintosh." I checked at other computer stores and found that the password was the same. Knowing this, you can add your own access name at your favorite store (none of the salespeople know anything about the Macs anyway). —JONATHAN BRINGHURST, SECANE, PA

YOU KNOW YOU'RE A MAC ADDICT WHEN:

...you find yourself shopping for a VCR that understands AppleScript.

—BRYAN CHEUNG

...you realize your Macintosh is worth more than your Toyota Celica.

—MICHELLE FLEITZ, WASHINGTON, DC

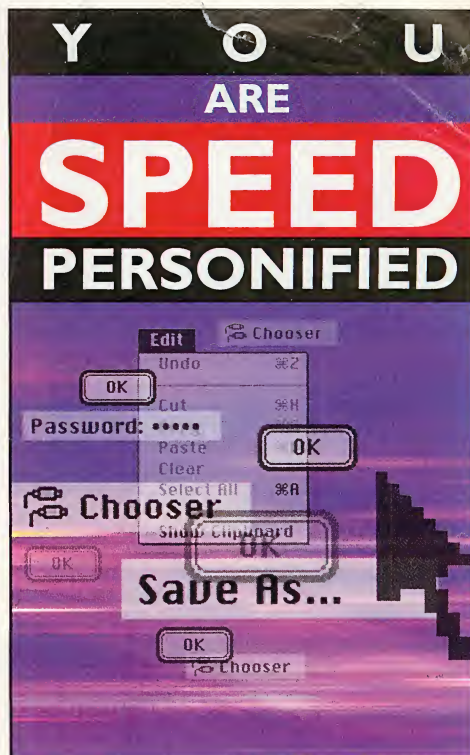
...the highway patrol stops you because your rear window is completely obstructed by all the Apple stickers from all of your Mac purchases.

—ROB & PENNY

...you find that the picture you took of your son at his computer has him framed out of the photo. —BARBARA J. LINK

...you say to your spouse: "Help me load the INITs and CDEVs into the van."

—ADAM NELSON GORDON



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—Bob LeVitus MacUser



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letters

HE'S GOT A POINT (AT LAST)

Is one's ability to use a Mac a measure of one's intelligence? I think it is. Example, my 4-year-old nephew is able to identify the SCSI ports, knows what a hard drive is, and knows how to run certain apps on my Mac. Most importantly, he knows how to scream, very loudly, "Long live Apple! Long live the Mac!", though I don't know where he learned this. My 2-year-old niece is learning how to use my Mac, she can say "SCSI," "Cyberdog," "MacAddict," "Apple rules," and she runs away from my sister whenever she wants to teach her how to use the PC. Now, these are signs, as any child psych will tell you, of very advanced intelligence (obviously, they take after their uncle... heh, heh). Anywho, on the other end is this scum-sucking yuppie who accosted me while I was reading your mag. Seems his ex-wife thought it would be nice if his daughter, who is about six, had a computer. So she buys a Mac and has it delivered to the scum's house BUT WITHOUT SOMEONE TO HELP SET IT UP! (Dramatic music here.) He spends the weekend trying to figure out what goes where. After numerous calls to Apple tech support, which at times he found quite stimulating, he finally gave up and left to drink with his buddies. So, Monday he spots me reading *MacAddict* and offers me \$50 an hour to install his Mac. I'm thinking, I'll take my time and throw all this mumbo jumbo at him and walk away with \$200. But when we get to his house, the computer is up and running. He can't figure out what happened, until his daughter comes downstairs and says that Mom dropped her off after school, she found the Mac and didn't think he'd mind if she set

UH, OOPS

On the February disc, we included a font called Smoothplate after getting permission from the author to use it. Problem is, the author had downloaded the font from the Internet, tweaked it slightly, and then reposted it. Bigger problem is, the font that was on the Internet appears to be a pirated version of Emigre Graphics' Template Gothic. If you like Smoothplate/Template Gothic and want to continue using it, then please do the right thing and purchase the font from Emigre (916-451-4344, <<http://www.emigre.com>>).

it up. He stood there with this stupid look on his face as she went on to explain how she helped her teacher set up some Macs at school, and how fun and easy a Mac is to use, and how she wants to be a graphic designer when she grows up, which is what I think made him pass out. So I gave her a few Apple stickers, taught her the "Long live Apple! Long live the Mac!" battle cry, and walked out of the house, perhaps not \$200 richer, but damn proud that children are still our greatest resource. LONG LIVE APPLE! LONG LIVE THE MAC! —REUBEN E. REYNOSO

OY! SUCH A DEAL!

Here is another copy of our program Multimedia Guitar: Guitar Shop Volume 1. Now the pressure is on! I've sent you *two* copies, and I'm only asking for *one* review! What a bargain! —JAMES C. COMPANATO, RED DOOR INTERACTIVE, ST. CHARLES, MO
James, we'll review it just as soon as we find a guitar-playing Mac addict who can write. Now where'd we put Lyle's number?

COVERUPS

I have a few ideas for BookCovers for the PowerBook 1400:

Mood Covers. After placing the 1400 on your lap, the cover turns a color that reflects your state of mind. Each color suggests a certain type of program to run. This could also tie in with the Labels Control panel. For example:
GREEN: Crank out a spreadsheet.
RED: Check for errors in the spreadsheet.
BLUE: Type love letter to significant other.
GRAY: Get lost! You're a Windoze user...

- Dream Covers: activated in sleep mode. Ever wonder what your Mac is up to when it's suspended?
- Will Work for Food Covers: may be necessary after blowing your life savings on that snazzy active-matrix model.
- Hot Plate Covers: to grill that Cuban sandwich you've been thinking about since 9:30 this morning. The AC adapter may be needed for this one.
- Airbag Covers: I read about a guy who ran over his laptop with a truck.

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Imagine the control and the freedom to focus on *your documents*, instead of on bloated, "legacy" applications. You decide what functionality you need, or don't need, and you plug it in. **Imagine the power of components helping you work faster and easier in an intuitive workspace** with true

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— Mac Addict, March '97

drag and drop capabilities. With WAV, simply grab and place nearly

anything you want to utilize in your documents—period. Java™ Applets, URLs, component parts, Netscape™ plug-ins, e-mail text files, Word™ and WordPerfect® files, HTML files, PICTs, GIFs, JPEGs, graphs, sound files and QuickTime™ movies all become integrated parts of WAV documents—not just links to system-consuming, traditional applications. **Imagine utilizing 'net data instead of just browsing it** by dragging websites, information and 'netfiles across your screen and dropping them directly into your documents. With WAV, the Internet is *built in*, and truly becomes your own personal document resource. **Imagine the flexibility of embedding cyber-buttons with direct links to 'netsites—**



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Folder Bay - Simple-to-use, easily accessible text controls are located here. You can also add your own project folders!

Cyber Button - Create single-click hot links from within your document to any Web, network, or other file location. Instantly launch local applications, sound or movie files, images and more.

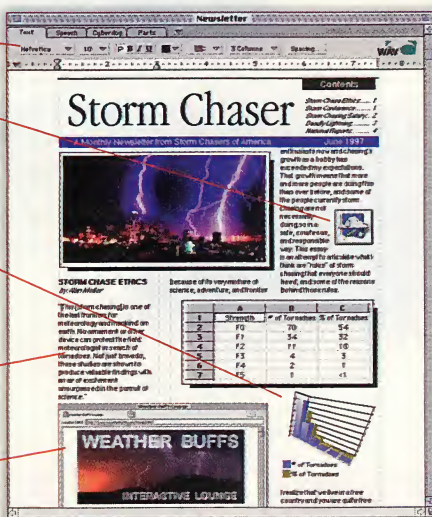
Embedded Part - WAV Documents are living documents* where components can interact with each other—as well as with WAV. In this case, "Numbers & Charts" (component parts from Adrenaline™ Software*) display data in an active-3D graph linked to a spreadsheet. As data is edited, the graph automatically updates.

Dynamic Text Wrap - When you drag a part into your document, you'll see how existing text wraps around the part as you move it—all in real time!

Embedded Web Page - Never before has a world-class word processor come with built-in Internet navigation, browsing, viewing and retrieval tools as a part of its control panel. When you open documents, WAV automatically opens live home pages or other embedded sites.

Other straightforward editing features include full tabs, colored text, search and replace, AppleGuide help, text to speech, word count, justification control, and full line-spacing. Most people only use about 3% of the text-editing features found in their traditional word processors. Now, you no longer need to lug around all that stuff! With component technology and WAV, if you need extra text-handling features, simply plug them in later.

*WAV installs complete with OpenDoc, Cyberdog (Net Browser, E-mail, Net Search, CyberButton, Net Management), C100™ Components LEXI & C-TextBox, and Apple Live Objects Essentials (QuickTime™ Viewer, Image Viewer, 3DMF Viewer, Apple Draw, Apple Audio).



Freakin' Awesome
rating, Mac Addict
Magazine, March '97



1997
Editor's Choice
and 5-star
technology rating.



BEST
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WAV incorporates the power of other Component 100™ Member companies including Cyberdog, Softline, and Corda. For more information on other component parts, visit the Component 100™ webpage at www.c100.org. Digital Harbor, L.C. is a private company with headquarters in Orem, UT. Digital Harbor, "WAV", Living Documents™, and memory: 8 MB (virtual memory only); 16 MB (virtual memory off) Mac OS version 7.5.1 or later, OpenDoc 1.0.4 or later. Digital Harbor, L.C., 167 S. Orem Blvd., Orem, UT 84058; www.dharbor.com, (801) 224-5184, fax (801) 224-5183. ©1997 Digital Harbor, L.C. All rights reserved.



the disc

Rapid reader response team delivers superphat disc with upgraded style.



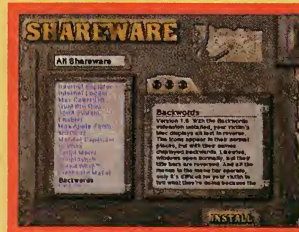
DEMOS

Take a tour through Drawing Discoveries, The Tick, Myth, SmartSound, and more.



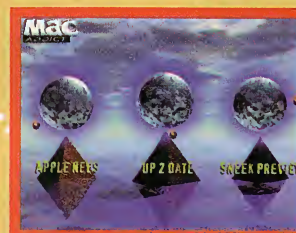
THIS ISSUE

Turn to this screen to find programs and files mentioned in the magazine. Whenever you see a disc icon in print, you'll know to come here on the CD.



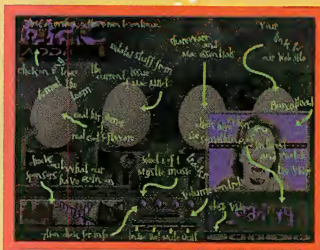
SHAREWARE

Here you'll find enough shareware and freeware to satisfy even the most demanding hard disk's appetite. Come here to turn your machine into a big Mac!



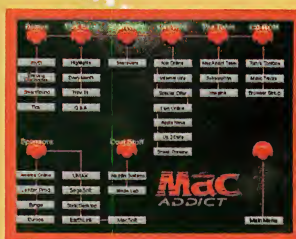
LIVE WIRE

Your special connection to MacAddict's Web site. No more Microsoft Internet Explorer unless you really want it (details on p24).



HELP ME

This helpful screen is available on all five major screens. All controls are carefully explained.



INDEX

Use this handy jumping point to get to any other screen on The Disc.

Last month we promised you renovations. This month we prove we mean what we say when we say what we mean. In addition to the pulsating eggs (we like our Easter eggs in plain sight—Ha!) on the first screen, we have finally named The Disc (this month's is MacAddict8), which will make all of you disc catalogers happy (we promise to change it to MacAddict9 next month, too). And—get a load of this—we actually let you *choose* your Web browser to access the Internet links. And you thought your letters were going into a cosmic void. —KT



GETTING STARTED



1. Pop The Disc into your CD-ROM drive.
2. Double-click the Start Here icon for your System.
3. Have fun!

REQUIREMENTS

Any Mac can access the shareware, demos, and System software from the Finder. Accessing the full CD-ROM interface requires 12MB of real RAM with System 7.1 or earlier; 16MB of real RAM with System 7.5 or later.

OUR DISC SPONSORS

To find immediate information from our sponsors, go to the Index (Option-click any help screen). Or you can wait until you see a message from them in the lower-right-hand corner of the main screen. Clicking on the message causes a TV screen to slide down from the top of the page, showcasing more information. Sponsors can also be accessed from the main window in the Finder.



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Marathon Infinity contains "Blood Tides of Lh'owon," a brand-new 30-level scenario, "Forge," Bungie's own powerful Map Editor, and "Anvil," a single tool for easy modification of shapes, sounds, and physics models.



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WAV is the first 'Net-enabled component word processor...that works the way you do. WAV's clever interface provides seamless and immediate access to other OpenDoc, Netscape, and Java components. Aside from the ability to contain parts, WAV can also be embedded into other OpenDoc parts.



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http://www.earthlink.net

TotalAccess is Earthlink's complete software and Internet connection package. It includes Netscape Navigator, an award-winning Internet access software, and everything needed to register for complete Internet access in fewer than five minutes. After the \$25 set-up fee, unlimited access is provided for \$19.95 per month. 'Round-the-clock tech support is provided via an 800 number.



Frustrated by Bookmarks? Web Quick tracks every page you visit, and automatically organizes them by site. It lets you create custom topics—and keeps them all at your fingertips with handy pop-up menus. Web Quick even converts existing Bookmarks. No wonder MacWEEK calls it "the first Web utility that is essential!"



ZPC places the player as Arman,

a fourth-generation Psionic War Messiah recently released from cryogenic imprisonment. With no memory of his illustrious heritage, Arman has few clues to his true mission: save his people, vanquish the evil occult group known as the Black Brethren, and utterly destroy the Dark Being they worship. Only then can he reclaim his Psionic crown and unite his followers.



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Reunion is a genealogy software program that helps you document, store, and display genealogy information: names, dates, facts, notes, sources of information, and digitized pictures. Reunion automatically creates common genealogy reports, charts, and forms, as well as birthday calendars, mailing lists, questionnaires, and indexes. It even calculates relationships, ages, and life expectancies. Reunion also displays and prints large, high-resolution, graphic wall charts.

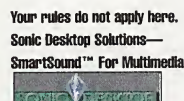


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We asked dozens of solitaire fanatics to help us design the perfect solitaire package. Absolute Solitaire is what they created. Includes many games not found in Solitaire Games Pack™, Solitaire Antics™, or Eric's Ultimate Solitaire™. Contains 24 new solitaire games and a brand-new interface for serious solitaire gameplay.



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Now you can quickly create music or sound effects customized to your exact specifications. This revolutionary new software makes the job easy while always giving you professional results. Try the demo on the enclosed CD and you'll see why SmartSound™ is the Absolute Easiest Way To Create Customized Professional Quality Soundtracks.



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The SuperMac S900 system was specifically designed with high-end functionality to meet the needs of creative design and production professionals. We kept all the best things you like—the familiarity and ease-of-use of the Mac OS and compatibility with all your favorite software. And, we wrapped it all up with the raw power of a 604 PCI-based design and delivered it at a price that can't be beat. Many unique features of the new S900 have been designed to eliminate performance bottlenecks that have long troubled the market.

CONTEST

Win!Win!Win!

Learn how a computer works with Digital Lab!

Dastardly Tom Hale scrambled the NeXT logo into 16 pieces! The nerve of some people. Help put the logo back together again, so Apple can fit the pieces into Rhapsody. When you pop in the CD-ROM, look for a secret hot spot by clicking all over the first screen. You'll be *automagically* transported to a hidden area of The Disc. When you solve the puzzle, the CD-ROM will give you a code.

Enter this code on the Web site for your chance to win Digital Lab. Find out all about this spiffy program in Kidz Stuff (p80).



DIGITAL LAB

Can you turn this...



into this?



HELP

You Have a Problem?

What! You need help? Well, if your superphat disc is mangled, warped, broken, or otherwise disturbed, you can get a replacement from Imagine's customer service. We've set up a special page on our Web site where you can order one <http://www.macaddict.com/info/service.html>, or you can call them directly at 415-468-2500. If you can't install anything, or get disk errors, do the same.

If you have another problem with The Disc, please stop by

<http://www.macaddict.com/cdrom> before you send us e-mail. If there isn't a solution there, then please let us know about it at <cdrom@macaddict.com>.

If you're having problems with System software, we recommend calling the good folks at 800-SOS-APPL. They'll be more than happy to help you.

And now, the fine print. Read it.

MacAddict is not responsible if your computer explodes after using The Disc. We have tested the contents of The Disc, but that is no guarantee that the software you choose to install will be compatible.

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Trinitron

Multiscan 200sx



SONY

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Displays by Sony. A cleaner, crisper picture.

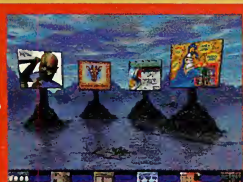
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SONY



DEMOS YOI

This month we bring you more than 20 terrific demos ranging from games to Live Objects to kids' stuff. See movies, build a home space, and feed your head with recreational software. Remember, demos are not the full product. Many features from the program are disabled: Image-editing programs usually add a watermark to the screen image, and games generally allow you into only a few levels.

1. Drawing Discoveries



Start your tour with Brainstorm's Drawing Discoveries. This wonderful program shows kids step-by-step how to draw various animals who live in Africa. This demo gently guides children through the process, encouraging them with a warm, motherly voice that they can draw a lion in any way they like. This Mac addict was able to follow along with the directions on the left-hand side and produce (on the right-hand side), for the first time in her life, something that indeed resembled a mighty feline. Interspersed throughout the tutorial are factoids about the animals. For instance, did you know that lions' manes grow darker with age? Note: You may need

to inspect your monitor for fingerprints after using Drawing Discoveries. The instructor encourages using fingers as a guide for making curves.

2. The Tick



This interactive demo of Inverse Ink's Tick vs. the Uncommon Cold includes two pages from the CD-ROM. Click on each panel to activate the digitized movie from the TV show. When you see a Tick cursor in a panel, click to find hidden animations.

3. Myth

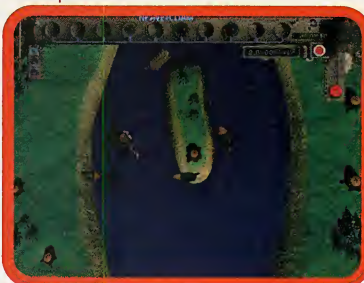
Bungie's carnage is not for everyone, and Myth is particularly graphic. But for the brave of heart who can stomach—no, really enjoy—the digital gore, our Myth preview is sure to please. First read our interview with developer Jason Jones in "PowerPlay." Then pop in The Disc to browse a slide show and three QuickTime movies. No, it's *not* an interactive demo—you want them to finish the game first, don't you?



4. SmartSound



This freakin' awesome program composes sequences of digital audio suitable for use in multimedia productions, Web pages, and just about any other place you need a beat. The Maestro feature interviews you to determine your requirements, then composes a piece. You can tweak the tunes in the editor. No music reading, perfect pitch, or mixing savvy required.

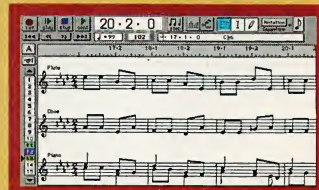


5. We packed The Disc with many other fine demonstration products. You'll find them through the Finder, not the MacAddict disc interface. Just double-click the Demos folder in the main window to be blown away. Kids, don't miss Sierra On-Line's Dr. Brain, in which you must guide a beaver through building a dam while navigating around logs and turtles, and avoiding a nasty guy with an evil laugh who destroys your work.

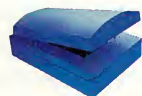
We want to hear from you! Submit your tunes to be included as a soundtrack on The Disc. See your name in lights by sending your recordings and a photo (in any digital format—no tape cassettes, please) to: *Music Mavens, MacAddict*, 150 North Hill Drive, Suite 40, Brisbane, CA 94005. If we like it, we'll use it on a future disc. Please do not send us the theme to "The Simpsons"! All recordings must be your own original material, which you made from scratch and haven't yet published. You will retain all rights to your work and just give us permission to use it on The Disc. Your music, of course, must be made on a Mac!

SCORE!

Bill Groesbeck of Billings, Montana, decoded January's CD-ROM contest. Bill was overjoyed to win Opcode's Musicshop 2.0 with a MIDI translator. Hopefully tuning up his musical skills will keep him warm: It was 70 degrees below zero (with wind chill) when Bill found out that was the winner. Bill: Remember to keep your Mac nice and toasty warm, or the electrons will all congeal together. Turn to page 15 for this month's contest.

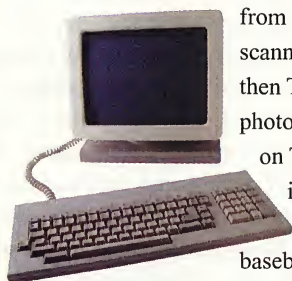


Digital Images In.



Panasonic Introduces TruPhoto™, the digital photo printer.

The new Panasonic TruPhoto printer creates real photographs from your PC or Macintosh® computer. Input an image into your computer from photo CDs, floppy discs, digital cameras, the Internet or scanners. Use your graphics program to manipulate the image, then TruPhoto will print out a bright, brilliant 3"x 5" glossy photograph. TruPhoto uses no toner or ink; it produces real photos on Thermo-Autochrome paper. MGI PhotoSuite™ for TruPhoto is included, so you can use your computer to retouch, crop and fix your photographs. And even create special effects, baseball cards, birthday cards, calendars and more. There are lots of ways to get digital images into your computer, but to get real photographs out, you need TruPhoto from Panasonic.



Real Photos Out.



Panasonic®
Interactive Media

www.truphoto.com



SHAREWARE

Find all kinds of spiffy shareware, freeware, beerware, e-mailware, and postcardware in this section of The Disc. We continually strive to make the MacAddict disc reflect what you, the viewing public, want. This month some shareware isn't even in an installer! Please send your suggestions for the MacAddict superphat disc to <cdrom@macaddict.com>.



OUR WEB SITE links to the latest software versions.

FUN AND GAMES

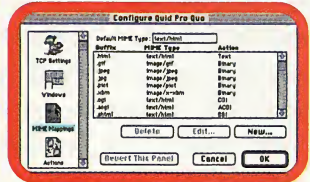
Bunny Killer



If those bunnies on the main screen are just a little too saccharin-sweet for you, then KILL THEM! Bunny Killer has a very simple interface. Twenty bunnies hop across the screen. Your cursor becomes a cross hair, and clicking on a bunny kills it. Cartoon violence is funny, but remember kids, killing real rabbits is sick and mean.

COMMUNICATION

Quid Pro Quo



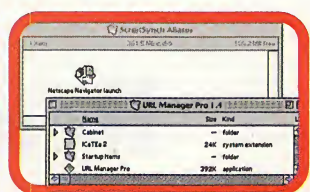
Formerly known as WebCenter, Quid Pro Quo 1.0 is an alternative to the relatively few, high-priced commercial Web servers for the Mac. Quid Pro Quo provides Open Transport-native performance and multi-threaded management of connections, which makes it capable of handling tens of thousands of hits in a day. Quid Pro Quo fully supports all of the WebStar conventions for CGI handling and password access. To round out its features, it provides server-side includes—to automatically insert the current date and time, for example—and memory-based file caching to speed access for clients. You can even drop in WebStar-compatible plug-ins! —WA

STEFAN'S SHAREWARE SELECTIONS

ScriptSynch

ScriptSynch is a shareware extension that synchronizes application launches. When an application is launched, Netscape Navigator for example, ScriptSynch

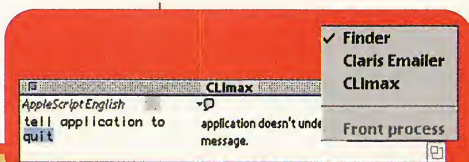
can be configured to launch a second program for you, such as your favorite bookmark utility or a Web page analyzer. This is done by placing the application you want launched by ScriptSynch (or an alias of it) into the ScriptSynch Aliases folder, which is placed in the Preferences folder when ScriptSynch is installed. Although ScriptSynch was originally intended to be used with AppleScript applets (hence the name ScriptSynch), it can be used to open any file, folder, alias, or application.



Not only can ScriptSynch also launch applications when an application quits, it is polite enough to quit the application it launched when the first application quits.

CLImax

CLImax is a unique utility that offers the graphical Mac OS a powerful command-line interface (CLI) that can directly control the Mac with AppleScript (see the AppleScript how-to in our April issue, p88, to learn more about AppleScript). Through its floating window, CLImax can send AppleScript commands to applications, target background applications for scripting events, and give you an easy way to switch applications.



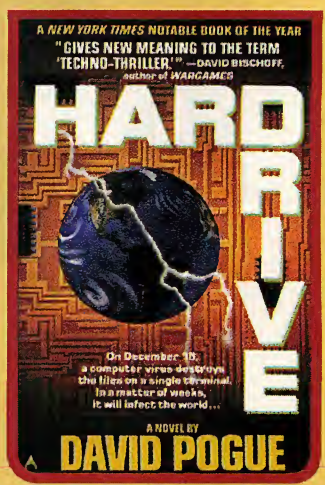
CLImax's window, which can appear and disappear at the touch of a key, floats above all other windows.

ScriptMenu

ScriptMenu is an underpromoted, yet very useful, Apple utility that places an iconic menu next to the Guide and Application menus. Although scripts can be stored anywhere, such as in the Launcher Items for access via the Launcher, scripts can be written and stored in a special Scripts folder within the System Folder for instant access from the Script Menu from within any application. —Stefan Anthony

HARD DRIVE

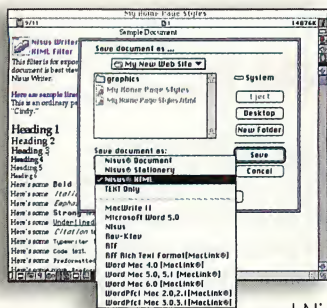
Welcome back to MacAddict's serialization of David Pogue's Silicon Valley thriller. Find part two of *Hard Drive* in the Finder at the root level of The Disc, in which our feisty heroine, Ellen, gloats about 50 percent college discounts on Macintoshes. Ahh, those were the days.



Nisus® Writer 5.0

Because the future is now.

You've heard about the Internet and Live Objects™ (OpenDoc®) for years, but until now they've been just out of reach. No longer. The technology is here, accessible and easy to use in new Nisus Writer 5.0.



Surf's up!

Now you can use Nisus Writer 5.0 to publish your own Web pages without knowing any HTML. Just create your pages using the special HTML Styles in Nisus Writer. (We've even included HTML Tool Bars for the most commonly used commands.) Then, select the HTML option in the Save As dialog box

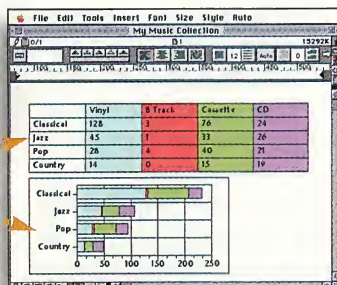
and Nisus Writer inserts all the HTML tags, converts

all the graphics and does all the other work for you.

And, with Nisus Writer 5.0's Internet Config support, you can now open any URL directly from Nisus Writer. All you do is Command-click a selected URL in your Nisus Writer document and you're surfing!

Nisus Writer Live

Nisus Writer 5.0 is light years ahead of the competition. It's the first major word processor to be a Live Objects container. That means Nisus Writer 5.0 lets you easily add functionality by dragging and dropping Live Objects like graph and table editors right into your Nisus Writer documents. It's as simple as adding graphics. Nisus Writer even comes with several of the hottest Live Objects available.



Multilingual Support

With Nisus Writer and the appropriate Apple Language Kit, you can type in non-Roman languages like Arabic, Chinese, Cyrillic, Hebrew, Japanese, Korean and Persian. And Nisus Writer no longer requires a Language Key, so you can do without that pesky little dongle hanging off the back of your computer.

Nisus Writer 5.0 Upgrade can be yours for only \$89.95*

MacConnection
800-800-2222
Item#34678

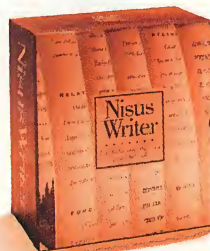
MacWAREHOUSE
1-800-255-6227
Item#UPG0553

The Mac Zone
1-800-248-0800
Item #81652



Check out these other cool features you'll find in Nisus Writer 5.0

- Complete support for Drag and Drop
- As always, Nisus Writer offers noncontiguous selection, unlimited Undos, and ten editable Clipboards.
- Search for nearly any pattern of text you can think of by using PowerFind™ and PowerFind Pro.
- Load up to 24 different Macro and Glossary files at once.
- New Style Libraries let you store collections of defined styles independent of particular documents.
- QuickDraw GX printing support
- AppleScript support
- Apple Guide help
- Custom search expressions
- And many more!



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800-943-5126

NISUS
Software Inc.

*Suggested Retail Price for the Upgrade - S.R.P. for Competitive Upgrade from other word processors \$149.00.

The 68k version of Nisus Writer does not currently support Live Objects.

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Nisus Software, Inc. - 107 S. Cedros Ave. - Solana Beach, CA 92075 (619) 481-1477, FAX (619) 481-6154



THIS ISSUE

Throughout this sweet-smelling bundle of tasty Macintosh information, you will see a funny-looking circular icon filled with whooshy spirals. That icon means that you can find spectacular software on The Disc that's related to the words you read. As you flip through the Reviews section, chances are this icon refers to a product demo. Articles in the How To section usually are accompanied by

a demo of the software mentioned and sample documents.

To get the software off The Disc and onto your Mac, go to the "This Issue" section on The Disc.

The dial on the left-hand side of this page switches between Highlights and Every Month (just like the Table of Contents a few pages back). To turn the dial clockwise, click the right-hand side of the dial (and vice versa to go the other way). The middle column lists the article titles. Clicking an article title flips up, in the right column, a list of software to install. Click on the name of a piece of software to get its description.

HIGHLIGHTS

Turn to page 38 to find out what's NeXT for your operating system. Then, come back and slip in The Disc to dress up your Mac in black. Your sleek new

system will look just like a NeXT cube, except for the platinum on the outside.



You'll first need to change the way your windows look. You can do this with either Hans Jensen's NeXT LeAP color scheme for Kaleidoscope or with Anthony Saxton's WDef III 3.1.



Then you can spruce up your icons with some pretty NeXT-like icons from Pierre-Luc Paour.



Or you can use Michael Jardeen's NeXT Folders, which adds a small icon to a NeXT folder and also includes desktop patterns.

Only when contemplating

icons does this Mac addict shed tears that Apple bought NeXT. We hope that Apple will make Rhapsody look like the MacOS and perform like Openstep. But then, we're icon snobs.

REVIEWS

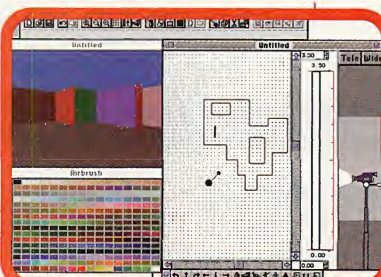
This month's disc includes 10 demos of programs that are reviewed in this issue. This includes the CD-ROMs and Kidz Stuff sections that fall after our regularly scheduled programming.

Snapz Pro



This nifty utility from Ambrosia greatly improves on the standard Command-Shift-3 screenshot capabilities of MacOS 7.5.x. While MacOS 7.6 adds some more screenshot filters, you'll still need Snapz Pro if you want to save your images as anything other than PICTs. Since we here at MacAddict enjoy helping others reach nirvana, here's another koan for you. How do you take a screenshot of a screenshot utility?

Virtual Home Space Builder



Woo Hoo! The Mac finally has an easy-to-use VRML space builder. Just make boxes, and then drag colors and textures onto them. When you've made your home space, tell us about it!

HOW TO

Use OpenDoc

Every Live Object—and a few dead ones—you'll need to follow along with Dan Turner's OpenDoc tutorial. One caveat—if you need OpenDoc itself, you'll need to reach for last month's disc.

EVERY MONTH

Get Info



What do you get when you cross people from MIT's Media Lab and the Rhode Island School of Design? Vibrating fruit! Although you can't see it here, this fruit is really jiggling around. Curious? Just check out the

ThinkFish demo on The Disc and see how 3D is changing. To work the demo, select the 3D object from the top row, and then "paint" it with a 3D style from the left column.

WHEN YOU SEE this icon in the magazine, find the mentioned software in this section of The Disc.



Are you the kind of person who always wants everything your own way?

Cool!

EarthLink's Internet access now includes your Personal Start Page.

Netscape: My EarthLink Start Page

Back Forward Home Reload Images Open Print Find Stop

Netsite: <http://www.earthlink.net/start/nph-bserver-v2.cgi>

What's New? What's Cool? Destinations Net Search People Software

Hi Wendy

Refer your friends and win!

Until the end of 1996, you can participate in a special referral program that will qualify you to participate in cool contests and events: Win T-shirts, jackets, gift certificates, or a seven day cruise! For more information see our [Special Agent](#) site.

Internet And Web Help Site

YOUR EMAIL

YOU HAVE 3 EMAIL MESSAGES

EARTHLINK

HOME PAGE
HELP
SERVICES
THE ARENA
BLINK
THE STORE

START PAGE

HELP
MODIFY

EARTHLINK NETWORK

SEARCH

SEARCH

☐ INFOSEEK
☐ BIGBOOK
☐ DOWNLOAD.COM
☒ EARTHLINK

WEATHER

LOS ANGELES

Monday

Partially cloudy and cool
55 / 69

Tuesday

Rainy and cool
60 / 66

NEWS [modify]

Your Start Page news is provided by [Individual](#)

Travel & Tourism

[Airlines Offer Travel Bargains Up to 75% Off](#)
[Consumers Can ...](#)

[Vanguard Airlines' Incredibly Low-Everywhere-We-Go Sale](#)

[Guest service soars with Vail and Beaver Creek revolutionary in-flight ...](#)

[Pennsylvania Governor Ridge Announces Unique Regional Public/Private Partnerships to Impact ...](#)

[U.S. space-style ride for the public -- at \\$10,000](#)

[Sampling Japanese Theme Parks](#)

Interactive Games & Entertainment

[Acclaim Entertainment's Space Jam Video/PC Game Makes a Fast Break ...](#)

[LIVE Entertainment Offers Walk-on Role in Motion Picture to Web ...](#)

[Tim Allen, Dana Carvey, Dennis Miller, Kevin Bacon, Carl Reiner ...](#)

[Digital maps of New England to make life easier for ...](#)

Music

[Online giants accused of copyright scaremongering](#)

[Rolling Stones to tour U.S.-British newspaper](#)

[Windham Hill Composer/Pianist Jim Brickman to Release Third Album 'Picture ...](#)

[Bone Thugs-N-Harmony Keep Promise to Take Tie to the Top ...](#)

[Regina Regina Release Debut CD on Giant Records New Duo ...](#)

STOCK QUOTES [modify]

Quotes are provided by [PC Quote](#). Data is delayed 20 minutes unless noted.

Company Symbol	(MSFT)	(T)	(IBM)	(ATVI)	(AAPL)	(NSCP)	(INDU)	(COMP)
Last Sale	79 7/8	39 1/8	151 7/8	10 3/4	22 1/2	54 3/8	6337.16	1283.04
Net Change	+ 3 1/8	0	+ 3 1/4	- 1 3/8	- 1/8	- 1 5/8	+ 28.83	+ 16.72
Time of Last	16:01	17:01	16:29	16:00	16:01	16:01	14:04	13:44

WEB LINKS [modify]

EarthLink	Sports	Entertainment	Finance	My Favorites
EarthLink Home	EarthLink Sports	EarthLink's Hollywood	EarthLink's Finance	UNIX Reference Desk
Daily bLink	ESPN	MovieLink 777FILM	Smart Money	News.com
The Arena	SportsLine USA	Hollywood Online	CNN Finance Network	Hotwired
The EarthLink Store	The Sports Network	Movie Reviews	NASDAQ	CNN
What's Hot	The Internet Movie Database	The Ultimate TV List	Investor Dictionary	Word
Technical Support	The Sports Server		Shareware.com	USC

- 1 STYLIZE** Choose how your page looks and what goes on it.
- 2 GOT E-MAIL?** We'll tell you as soon as it comes in.
- 3 NEWS** Select from 25 categories you're interested in and we'll gather it for you from over 700 sources.
- 4 STOCK QUOTES** Watch your wallet fatten with your choice of stock quotes updated by PC Quote.
- 5 PREMIUM CONTENT** Enjoy discounted rates and direct links to services from Quote.com, CompuServe® and others.
- 6 WEATHER** Find out if you need shades or a scarf, with a 4-day local forecast.
- 7 WEB LINKS** Select personal links to your favorite Web sites so they're only one click away.
- 8 WEB SEARCH** If it's not on your Start Page, use a keyword to search the Internet to find exactly what you're looking for.



It's your Internet™

Unlimited Internet \$19.95 a month
Your personal Start Page
Toll free 24-hour help line
call **1-800-395-8425**

All the goodies you expect... and more! Personal Start Page Netscape Navigator™ E-Mail Newsgroups
Free Website Multiplayer Gaming Over 500 Dial-up numbers 24/7 Help 800# Chat ISDN Business Solutions
National Frame Relay The Net "A"™ Rated Pournelle's Choice Yahoo Best Free software package for Win3.1™, Win95™ and Mac®

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the web site



FIND THESE ITEMS on our Apple Links page at <<http://www.macaddict.com/links/apple.html>>.

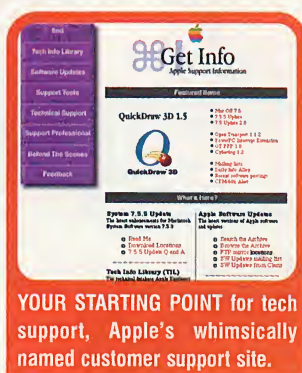
Continuing our occasional series of Mac-oriented surfing expeditions, we turn this month to the task of navigating the sprawling labyrinth of Web sites known as <<http://www.apple.com>>. Having discussed the quest for software updates in some detail (see "The Web Site," Dec/96, p22, and Feb/97, p26), we'll concentrate here on information and helpful resources.

Advice and Consent



Having taken a fair amount of flak for the haphazard organization of its Web presence, Apple has tried to arrange its sites in a somewhat logical fashion. The company's Web sites are grouped into seven broad categories, ranging from product info to tech support to corporate info. For an overview of the organization du jour, plus a powerful sitewide search engine, consult Apple's FindIt page—highly recommended as a bookmark.

If you're fishing for information on a specific topic, the FindIt page's search engine is a good place to start. If you're looking for marketing information on a



specific Apple product, see AppleFacts Online; the Mac OS Software & Hardware Guide, meanwhile, offers a searchable database of thousands of third-party products. For troubleshooting help with an Apple product you already own, the famous Apple Tech Info Library awaits your command.

Speaking of tech support, as we go to press, Apple just launched the promising Tech Support Online, a collection of answers to common questions, pointers to important software updates, and troubleshooting discussion forums. The discussion forums are populated by other users rather than by Apple employees, so you may not find answers for your more esoteric questions—you may have better luck with a Usenet posting.



Perhaps you came in search of hot news rather than tech support. On those

occasions when Apple has just bought a new operating system, lost a couple hundred million bucks, or announced some vague strategic alliance that will yield dividends by the year 2015, you'll find the gory details at The Source. This collection of press releases and reference material provides everything you need to play armchair journalist.

Light Reading

Once you've answered those burning questions, you can waste some more time browsing Apple's massive volumes of information. The Technology & Research pages will steer you to dedicated sites for most of Apple's snazzy technologies, from the QuickTime Media Layer to Internet technologies to the Mac OS. Burrow around in here for a while, and you'll discover more about QuickDraw 3D than you ever hoped to know.

For a morale boost, take a gander at the Why Macintosh? site. As well as facts, figures, inspirational stories, and other resources for the Mac advocate, you'll find information on ordering free Apple-branded merchandise with which to display



PLAY THE NERD with Apple's collection of developer Technotes. We particularly recommend the dogcow-related ones.

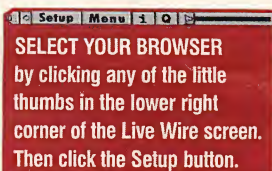
your loyalty to the world.

The adventurous Mac addict can geek out at Apple Developer World. Although most of this material will go over the heads of nonprogrammers, you'll be able to amaze your friends and amuse your family after reading a few issues of Apple Directions and following it up with some choice Technotes.

But don't leave without visiting Dr. Gilbert Amelio: A Man, A Plan, A Canal—Panama! in which Apple's fearless leader indulges in his love of palindromes. —Mark Simmons

LIVE WIRE

This month's disc is just full of surprises. On the Super-Special April Disc, you may select your very own browser (the one you use every day). We are still working out all of the kinks in this new technology, but we're pretty sure it works. Would we lie to you?



YOU'LL THEN SEE this box. Click the Select Browser button, then use the Mac's standard file dialog to find and choose your preferred browser.

A rose is a rose is a... wait a second.



Kodak DC-40 Digital Camera



Casio QV30 Digital Camera



EPSON PhotoPC 500 Digital Camera

\$499



THE NEW EPSON® PHOTOPC™ 500 DIGITAL CAMERA WITH SUPERIOR IMAGE QUALITY. Roses are red, violets are blue, but only if you take their picture with the EPSON PhotoPC 500. The digital camera with 640x480 pixel resolution that gives you the most lifelike pictures around. It's got all the

convenience of a regular camera, from its built-in red-eye

no other camera has Epson's unique ColorTrue™ in-camera

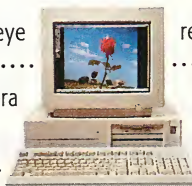
images that add impact to documents or e-mail messages.

to preview,



playback, or erase images.

Memory that expands to hold 200 JPEG images. PC/Mac compatibility. And our free Internet Sampler Pak (valued up to \$300) that lets you access and create Web pages. So, when it comes to digital photography, a camera by any other name just isn't as good. For more information, visit www.epson.com to download some sample images, or call 1-800-GO-EPSON and ask for operator 3015.



reduction flash to its optional lenses and filters. But

processing and ClearOptics™ system, for accurate, vivid

The PhotoPC 500 is flexible, too. With an optional LCD



YOU'VE GOT TO SEE IT IN

EPSON

COLOR.™

FRITZ CAMERA CENTERS



Street price may vary. Rose photos were taken with the Kodak DC-40, Casio QV30 and EPSON PhotoPC 500 as configured for retail sale. No special effects or lenses were used. Awards given to the EPSON PhotoPC, the first in the line of Epson color digital cameras. EPSON is a registered trademark of Seiko Epson Corp. ColorTrue and ClearOptics are trademarks of Epson America, Inc. All other trademarks are the property of their respective owners. ©1996 Epson America, Inc.





get infaux

Trash, trends, dishwashers, King Kahng, and inside scoops you won't find anywhere else.

No MORE WORLD WIDE WAIT

Feeling a little jittery as you surf the Web? Are Web pages just a tad too jumpy? Well, you're among many who feel that their browser has been on a caffeine rush for just a wee bit too long.

To combat overly technology-enriched pages from taking over the planet, Apple and Sun Microsystems are jointly developing a new technology, code-named Decaf™, which aims to calm the Java hysteria.

Here's how it works. There are two parts to Decaf™: language and execution. Developers can use the Decaf™ language to write platform-neutral code.

This means that they can write their programs once, and deliver them on Macs, IBM clones, and Unix boxes simultaneously. One advantage to using Decaf™ over Java is that the code generated is one-eighth as big. Decaf™ can do this

because Decaf™ compilers generate bit code instead of byte code.

Once the code is compiled, it's time to execute the program. There are two ways

It's so much easier to convey meaning without all those pixels moving around.



LIKE OTHER GREAT TECHNOLOGIES, Decaf™ has an easy-to-identify logo. To contrast the technology of Java, Decaf™'s steam has gone cold.

to run a Decaf™ applet. Because Decaf™ is written to a "virtual machine," you can use Apple's Mac OS Runtime for Decaf™ to interpret the applet, or you can deploy Metrowerks' just-a-little-late compiler, which translates the virtual code to native code. Either way, Decaf™ promises to slow your machine to an acceptable crawl.

The response from Redmond was typical. "Microsoft plans to embrace and extend this promising new Internet technology," reads a recent press release. Further, Microsoft plans to make its own implemen-

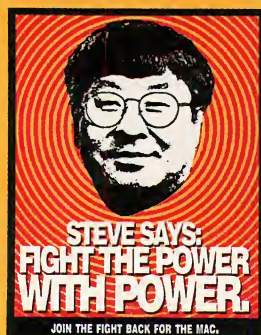
tation of Decaf™ that is 50 percent slower and adds commands not available to other Decaf™ interpreters. Decaf™ for Windows 95 will, of course, be the sanctioned way to deliver Decaf™ applets. Apple and Sun implemented a 100 percent Decaf™ program to fight the insanity.

Web designers are ecstatic at the announcement. "Shocked" was so 1996," complains an anonymous HTMLer, "I'm glad Apple is taking the lead in removing the complexity from the Internet." Another designer confides, "It's so much easier to convey meaning without all those pixels moving around—and don't tell anyone, but the X-Windows feel of Java is so ugly."

In a related announcement, Metrowerks' Greg Galanos promised that Codewarrior for Decaf™ will be in the next version of its flagship product, Codewarrior Gold. Galanos claimed that programs already written in the company's object-oriented framework, PowerPlant, can be ported to Decaf™ twice as quickly.

Apple promises that Decaf™ will work interchangeably with Live Objects, and the part that adds this functionality has been dubbed "Pinto beans." In a *MacAddict* taste test, subjects were unable to tell the difference between Java beans and Pinto beans.

INCITEMENT TO RIOT



Before he roused the rabble at January's Macworld Expo in San Francisco, Power Computing president Steve Kahng fought another great fight. Years earlier, the giant "King" Kahng

climbed a certain New York City monument, clinging to his first love, Fay Wray. Let's hope his assault on Microsoft is more successful.

MISSING PERFORMAS FOUND

WHERE, OH WHERE, COULD THEY BE?

Last Christmas, Apple Computer sold 90,000 fewer Performas than expected, which contributed to the \$120 million shortfall in the fourth quarter. We did some digging and found the awful truth: Those 90,000 potential Apple customers went into their local Sears hoping to get a powerful PowerPC processor. But they didn't leave with one. The "helpful" salespeople heard the word Performa and pointed the hopeful parents toward the dishwasher section, where the misguided shoppers picked up Maytag Performas instead of

sexy 6400s. Looks like Maytag's repairman will be a little less lonely as confused kids ask him where the dinosaurs are.



MIGHTY MAYTAG CLEANS UP with consumer confusion. Special thanks to reader Bryan Bland for cluing us into this scam.

PHREAKY PHONES

TRAFFIC TRASH

Sorry, Ellen, we hate to tell you this, but, your janitor is a Mac addict. He sent us this snippet from last quarter's phone bill. Please don't fire him.

Ellen Hancock
Apple Computer
1 Infinite Loop
Cupertino, CA

PACIFIC HELL
A Purely Hypothetical Company

Pacific Hell Direct Dialed Calls

*Local Calls (Zones 1 and 2)

All Local Calls made are included in your Flat Rate Service

* Local Toll Calls

	Date	Time	Place and Number Called	Caller ID	Type	Rate	Minutes	Amount
4.	Oct 28	10:18am	Menlo Park CA 415 462-4100	Be, Inc.	Direct Day		15	2.14
5.	Oct 30	11:46am	Menlo Park CA 415 462-4100	Be, Inc.	Direct Day		10	1.40
6.	Nov 1	6:40pm	Menlo Park CA 415 462-4100	Be, Inc.	Direct Eve		12	1.24
7.	Nov 6	12:51pm	Menlo Park CA 415 462-4100	Be, Inc.	Direct Day		8	1.12
8.	Nov 14	4:24pm	Menlo Park CA 415 462-4100	Be, Inc.	Direct Day		9	1.27
9.	Nov 22	11:09am	Menlo Park CA 415 462-4100	Be, Inc.	Direct Day		5	.72
10.	Nov 25	3:34pm	Menlo Park CA 415 462-4100	Be, Inc.	Direct Day		2	.27
11.	Nov 26	10:02am	Redwood City CA 415 366-0900	NeXT	Direct Day		34	4.76
12.	Dec 2	12:57pm	Redwood City CA 415 366-0900	NeXT	Direct Day		26	3.90
13.	Dec 5	10:32am	Redwood City CA 415 366-0900	NeXT	Direct Day		14	1.96
14.	Dec 10	5:12pm	Redwood City CA 415 366-0900	NeXT	Direct Eve		7	.63
15.	Dec 12	2:19pm	Redwood City CA 415 366-0900	NeXT	Direct Day		19	2.66
16.	Dec 16	11:03am	Redwood City CA 415 366-0900	NeXT	Direct Day		3	.43
17.	Dec 19	5:23pm	Redwood City CA 415 366-0900	NeXT	Direct Eve		12	1.56
18.	Dec 20	1:42pm	Redwood City CA 415 366-0900	NeXT	Direct Day		93	13.02
								37.08

Total Pacific Hell Direct Dialed Calls

\$37.08

Win a Surround-smell System

The nose knows! We've collected some of the sicker smells found in the Macintosh industry. Scratch the magazine to identify the smell, then match the smell with its description. If your nose is better than your fellow Mac addicts', you'll have a chance to win a superspiffy Surround-smell System. With this brand-new hardware, games using the Scent Sprocket will be able to add odors to their environments. Imagine not only hearing the splatter and seeing the gore when you kill your enemies, but smelling their guts, too! Marathon will never be the same again. For your chance to win, enter on our Web site. We'll pick a winner at random January 1, 1904.



1. Eww! It's the smell of four 533MHz Exponential X704s soldered onto a motherboard with no heat sinks or fan!
2. Ever smell the lint that collects on your mouse ball?
3. Oops! Smells like Nikki left a case of floppies sitting out in 100-degree weather.

WHAT ABOUT PINK? AND TAN, AND BLACK

To help Apple engineers remember where they fit in under the new OS strategy (see "Rhapsody OS: The Soul of the Machine, p38), Apple chief technical officer Ellen Hancock has mandated the following dress code. Engineers developing the Mac OS must wear blue Polo shirts; those working on Rhapsody must wear yellow. The lucky few working on the Mac OS Run-

time for Java get to wear browser gray. It remains to be seen whether the rebellious Jolt and Twinkies crowd will go along with the scheme. We've already seen T-shirts with this slogan: "Blue + Yellow = Monkey-puke Green." —KT

Evangelists won't be the only ones in Polos.

HMM. IT'S APRIL, ISN'T IT?



LLOYD DANGLE



get info

News, trends, and other very valuable information that you will want to know.

SPEED CAN KILL

BUT YOU GET THERE FASTER

Remember the Barry Levinson film *Tin Men*? Set in 1963, it was about, among other things, two home-siding salesmen's obsession with the latest Cadillacs. More specifically, their tailfins: how high, how big. Well, it's the '90s, and we're well beyond all that. Now we're obsessed with important things like megahertz and Level 2 caches.

Obligingly, Apple has rolled out its '97 models, which should all be available now, and mama, there are speed bumps and new

processor, 16MB of RAM, a 1.2GB hard drive, an 8X CD-ROM drive, two 12-inch PCI slots, built-in Ethernet, and 256K of L2 cache. The motherboard in this box is based on the Tanzania design, which Motorola co-developed with Apple for its StarMax line, so the processor isn't upgradable. Due to the vagueries of development times, the Power Mac 4400 will ship with System 7.5.3 but will come with a coupon for a System upgrade for a nominal fee. This model more or less replaces the Power Mac 7200—more, in that for a price within \$100 of the Power Mac 7200, you'll get a faster and more modern processor (603e rather than 601); less, in that you'll lose one PCI slot. Also, as of mid-January, the Power Mac 4400 came in \$100 lower than its closest clone competitor, Power Computing's PowerBase 200.

The rest of the Power Mac line, code-named Montana, use the same motherboards (Tsunami) as the Power Macs they replace (the 7600, 8500, and 9500) but add features, speed, and a new industrial design. The Power Mac 7300 takes the place of both the 7200 and 7600; it starts at about \$2,300 for the 180MHz machine and goes up to \$2,800 for the 200MHz screamer. The Power Mac 7300 uses a 604e processor and comes with 16 or 32MB of RAM (expandable to 256MB—the so-called powerhouse PCs will take only 80MB), a 2GB hard drive, built-in Ethernet, a 12X CD-ROM drive, three 12-inch PCI slots, and 256K of nonupgradable L2 cache. One feature that hasn't crossed the bridge into 1997 is the Power Mac 7600's video-in capability, which was far surpassed by inexpensive video boards such as ATI's Xclaim VR, anyway. Otherwise, this unit gives you the power of the Power Mac 8500 for \$700

to \$900 less, and it bumps up against the specs of Power Computing's PowerTower 180 and 200 (the PowerTowers have 512K of L2 cache that is upgradable, though) for about the same price.

The Power Mac 8600 keeps the composite



TWIN TOWERS: A new case, a new cause to love the Power Mac 8600 and 9600.

**Now we're
obsessed with
important things
like L2 caches
and megahertz.**

and S-Video-in and -out capabilities of the Power Mac 8500 but comes in the new "K2" case, shared with the Power Mac 9600. (Just to keep the two straight: The 8600 has three PCI slots; the 9600 has six). This new design will thrill anyone who's been up to their elbows

trying to install RAM. To get inside, you simply pop off one side of the case, lay the unit on its side, open two flip tabs, and up pivots everything—power supply and all—leaving as clear a path as one could wish to the motherboard. (The demonstration of this feature received thunderous applause at the press preview.) In addition, the Power Mac 8600 has a 200MHz 604e processor, an internal 100MB Iomega Zip drive, and shares the other good specs of the Power Mac 7300. And how much would you expect to pay for this? How about \$3,300 to \$3,400? Motorola's StarMax 4000/200 may edge out the Power Mac 8600 in price by \$100 and offer five PCI slots, but you don't get the Zip



THIS PHOTO IS NOT REVERSED: Just to be different, the Power Mac 4400 has its floppy drive on the left.

features to warm the hearts of the most jaded computer cognoscenti.

Apple seems to have heard both Henry David Thoreau and consumers alike crying "Simplify, simplify." There are now only four Power Macintosh models—the Power Mac 4400, Power Mac 7300, Power Mac 8600, and Power Mac 9600—which replace all those that came before. Standing slightly on its own is the Power Mac 4400 (about \$1,700). Previously available only in Europe, the Power Mac 4400 comes complete with a floppy drive on the left (must be a Euro' thing), a 200MHz 603e

QUICKTIME VR 2.0

LIKE HAVING EYES IN THE BACK OF YOUR HEAD

Apple engineers keep toiling away to put more reality into virtual reality. QuickTime VR 2.0 is the newest member of the QuickTime family. Retaining QTVR's ability to "see" an area with a 360-degree view (as well as zoom in and out), Apple added the ability to include 3D objects in scenes. You can zoom in and out on embedded objects, which now can be set in motion. You also can add hot spots to objects. Click on a hot spot, and QTVR can invoke an URL, for example.

Version 2.0 also offers a new control bar and better compression using the QuickTime Media Layer. Apple made QuickTime VR 2.0 into an extension, which means that you can view QTVR files in most applications that support QuickTime, including the ubiquitous SimpleText. The best news about QuickTime VR 2.0, however, is that it's available for download from Apple's Web site. Check out <<http://quicktimevr.apple.com>> for the latest.

QuickTime VR has made some new friends: BeHere (<<http://www.behere.com>>) released a camera that easily

creates QuickTime VR panoramas—see "Cravings," p35; eVox Productions (<<http://www.vox.com>>) is developing a collection of QTVR clip art called, wittily enough, Clip VR; and OLIVR (<<http://www.olivr.com>>), a new company with new compression technology, has a way to progressively render QTVR scenes so you can look around more quickly. —DR



Federico Jordan

drive or the video capabilities, you sacrifice an upgradable processor, and you're limited to a maximum of 160MB of RAM.

The King of K2, the Power Mac 9600, weighs in right around \$4,000 (about \$200 less than a Power Mac 9500 with no onboard video) and improves on the 8600 with a 4GB hard drive (though no Zip drive), 512K of L2 cache, three more PCI slots, and a new, 4MB IMS Twin Turbo 128 graphics card. There's also the Power Mac 9600/200MP, which adds a second processor to the motherboard and \$900 to the bottom line. In mid-January, a similarly equipped 200MHz PowerTower Pro from Power Computing cost about the same as the single-processor Power Mac 9600.

Perhaps the nicest feature of all these new Power Macs is the competitive pricing: The premium you once had to pay to get the cachet of the Apple brand seems to have shrunk. Consider that all these new Power Macs come with keyboards, Data Viz data translators, and the Apple Internet Connection Kit, and you'll see that you certainly get more megabang for the buck than ever before. As for tailfins, well, you may have to add them on yourself. —DDT

Clone Wars

Apple isn't the only company introducing new models for 1997. While the clone makers aren't running about as frantically as the sorcerer's apprentice, a few speed kicks, bundling, and—this will warm the hearts of the cheapskates among us—price cuts are near.

Umax Computer's news is speed: 240MHz on a 604e chip. The S900/240 is basically the same as the S900/225 (Jan/97, p64), except that it comes with the E-100 "Extended Performance" Ultra SCSI/Ethernet card (previously a \$500 option) and is faster. It still comes with 32MB of RAM, a 2.1GB hard drive, an 8X CD-ROM drive, 512K of nonreplaceable Level 2 cache, and the 8MB IMS Twin Turbo graphics card. It should run just less than \$5,000. The rest of the S900 line, and the J and C lines, remain unchanged.

Power Computing's 1997 news

Win an eMate 300

Our apologies to the adult Mac addicts who are pining away for this neatest of all gadgets. This month's contest is open only to those 12 years of age and younger. To win Apple's eMate 300, the first in a class of handheld mobile computers, tell us why you love the Mac. We'll judge the entries based on originality, humor, and practicality. Your entry must be 100 words or fewer (it may include pictures) and must be postmarked or e-mailed by April 15, 1997. We'll contact the winner and run results in a future issue. (We must be able to verify your age.) Send your best shot to our Web site at <<http://www.macaddict.com>> or to Way-Cool eMate, c/o MacAddict, 150 North Hill Drive, Suite 40, Brisbane, CA 94005.



Price cuts will warm the hearts of cheapskates everywhere.

includes a new flavor of PowerTower and lower prices. The flavor is the PowerTower Pro 250MP (the same ol' PowerTower Pro but with two chips) at \$5,995, with a twin-225MHz version running \$4,995. Prices on the existing PowerTower Pro 225 dropped to \$4,295, bundled with a huge software pack including Macromedia Director and the Be OS. For those with more modest

needs and less patience, Power Computing has the QuickShip PowerBase package: the unchanged PowerBase 200 with 16MB of RAM, 256K of upgradable L2 cache, accelerated video, an 8X CD-ROM, a 1.2GB hard drive, a 15-inch monitor with speakers, a Global Village 28.8Kbps external modem, and a whole lot of bundled software. For \$1,995, this should get to your door 48 hours after you place your order. For \$500 more, the package will include a 17-inch monitor, 32MB of RAM, and a 33.6Kbps Global Village external modem. —DDT

NEW

get info

CONFLICT CATCHER 4

(Casady & Greene: 800-359-4920,
<http://www.casadyg.com>, \$49.95 (SRP),
 scheduled to ship before April)

Conflict Catcher 4, an award-winner before it even shipped, will manage plug-ins and filters for individual programs such as Adobe Photoshop and Netscape Navigator. The new version will also display more information about individual extensions and will automatically test for conflicts in the event of a crash.

NOW UP-TO-DATE & CONTACT 3.6.5

(Now Software: 800-730-7854,
<http://www.nowsoft.com>, \$69.95 (SRP),
 scheduled to ship in February)

Now Up-to-Date & Contact has added several one-click features: integration with e-mail (via Internet Config) so you can send e-mail to your contacts, complete with an e-mail history file; contact names merge with Microsoft Word 5, Word 6, or Corel WordPerfect documents; and access to the Web to get correct contact information (via Infoseek or one of its partners).

SMARTSOUND FOR MULTIMEDIA 1.5

(Sonic Desktop: 800-454-1900,
<http://www.sonicdesktop.com>, \$179.95
 (SRP), scheduled to ship late February)

SmartSound for Multimedia allows you to create full soundtracks for your multimedia projects, and now, with version 1.5, it allows you to import QuickTime movies of any length, add a soundtrack with a single click, and re-export your movie complete with audio. SmartSound 1.5 also provides support for RealAudio, IMA compression, and automatic looping.

THE APPLE CLUB PULLS A FAST ONE

AND MAY GET AWAY WITH IT!

If a state highway patrol started a group whose members could cruise the nation's freeways as though they were on a German autobahn, without fear of getting a ticket, would the average lead-foot shell out an annual fee of \$19.99 to put the pedal to the metal? Yep.

With the Apple Club, Apple is hoping that speed freaks will pay that exact price for ultrafast connections to high-speed servers available only to dues-paying, password-protected club members. This privileged pack can use its "diamond lane" access to more quickly download Apple System software utilities, updates, patches, and extensions. Members also receive electronic newsletters such as Information Alley and Guy Kawasaki's Evangelist, a monthly e-mail (confessional?) from Dr. Gil, special deals on Apple goods and services, a 60-day offer to buy AppleCare coverage at a 20 percent discount, a free CD-ROM, and their name tossed in a quarterly drawing for Apple hardware and T-shirts. Sounds good on paper, but how does it work?

Fire up Netscape Navigator 2.0 or later (you can also use America Online version 3.0 or Microsoft Internet Explorer 2.1 or later, if that's what you prefer) and join the club. We did. Curious to see whether the Apple Club really offered the speed and convenience promised in the brochures, we downloaded a large file from the Apple Club site and then downloaded the same file from several of Apple's mirrored FTP sites. Thrifty shoppers should note that at press time, some of Apple's public (translate: free) sites offered significantly faster download times than Apple's souped-up members-only servers. Both <ftp.info.apple.com> and <ftp4.info.apple.com> downloaded QuickDraw 3D version 1.5 at about 30K per second, whereas the Apple Club crawled in at around 24K per second.

Apple also hopes to entice potential club members by giving a free CD-ROM simply for signing up. But instead of offering general-purpose CD-ROMs such as dictionaries, atlases, or encyclopedias, Apple provides members with an odd assortment of three titles that includes the Apple Club CD-ROM, which can be used for

updating software and detecting viruses; Grolier's Multimedia Encyclopedia of Science Fiction; and Arome's Vegetarian Delights CD-ROM cookbook.

But wait, before you get too excited, here's what you *don't* get when you sign up for the club. System upgrades, such as System 7.6, are not available through Software Central, the club members' online warehouse of Mac goodies. You will still have to purchase all major



Member Services

HERE'S WHERE YOU'LL FIND ALL APPLE CLUB BENEFITS

WHY WAIT? Join the Apple Club today for mediocre access to a meager collection of overpriced services.

System upgrades from a software reseller.

If you're looking for Mac tech support, driving in the diamond lane won't get you any fast answers, either. You'll still have to dial 800-SOS-APPL for the solutions to your more personal problems. The Club Support branch of the Apple Club house only lets you e-mail Apple with questions that relate to hardware or software sold through the Apple Club. At press time, however, the Apple Club had nothing on its virtual shelves to sell.

Dissatisfied with the service? Want your money back? No dice.

You can cancel your service (in

fact, Apple holds the right to fold the service at any time without refunding your cash), but once you've parted with your payment, you can kiss those bills goodbye.

Theoretically, the Apple Club is a good idea—info addicts get fast access to the information and supplies they need, as well as quick and convenient subscriptions to a slew of Apple press releases and newsletters. Unfortunately, the Apple Club does not always offer faster service than what can be found at Apple's public sites, prompting the age-old question, "Why pay more for less?" In other words, if you're not on a need-it-now basis, the overall benefits of this not-so-fast-access service are probably not worth your \$20 donation to Apple's bottom line. —NE

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the Internet and kick the crap
out of snotty PC owners.**



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**Over 40 missions
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DVD AT LAST

APPLE LEADS THE WAY

DVD-ROM is coming to desktop computers, and Apple has made sure that it will be there on arrival. The DVD (Digital Versatile Disc) format has been talked about for a few years, but the first consumer DVD-ROM drives (similar to a CD-ROM drive) are just now on the market. Apple was the first vendor to show a prototype DVD-ROM drive running on a personal computer when it demonstrated a trial product, the Encyclopedia

of World Heritage that Sumeria created from five of its natural-history products, at Comdex in late 1995. Apple has been working steadily on DVD technology since then.

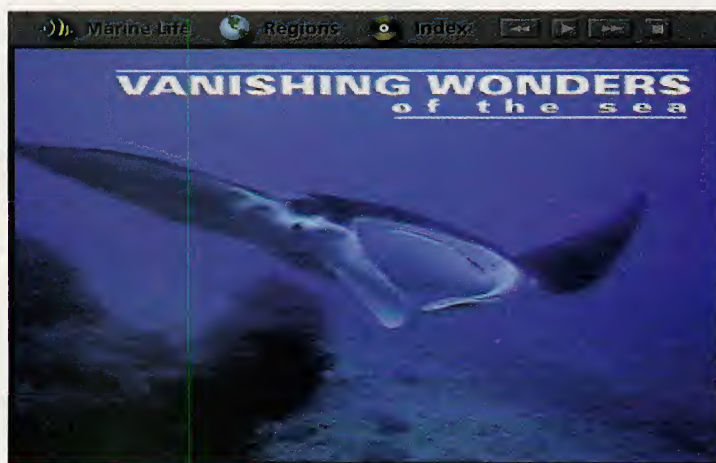
Analysts predict that DVD-ROM drives will replace CD-ROM drives in a couple of years. Digital versatile discs look just like CD-ROMs but can hold much more data—currently up to 4GB of data

(the specification allows for as much as 17GB of data on a single disc). They can hold digital video, computer data (like a CD-ROM) and higher-than-CD-quality digital audio. Future versions (available after 1998) will be rewriteable and erasable. The drives run at a minimum of 10X (compared with a 1X minimum for CD-ROM drives), which allows high-quality video playback.

THIS SPRING YOU'LL SEE DVD PLAYERS, devices that are meant to replace your VCR. A DVD player will play the video portion of DVDs, much the way a VCR plays videotapes. DVDs can hold a full-length movie, and the video quality is on par with a laserdisc.

Minor Repairs

Put your fire extinguisher away. There's no need for panic. PowerBook 1400s that were manufactured on or before January 9, 1997, will give weird messages when disk utility programs such as Apple's Disk First Aid are in use. But rest assured, your data is not at risk. Because the problem is caused by a missing reference file, it's easy to cure. Simply go to <<http://www.info.apple.com>> or <<http://www.powerbook.apple.com>> to download the PowerBook 1400 HD Updater. Users without Internet access can have the update sent to them by calling 800-SOS-APPL. —NE



WATCH OUT FOR THAT RAY! Sumeria will bring DVD content to your Mac this spring.

So should you buy a DVD-ROM drive? That depends. If you're in the market for a CD-ROM drive, consider this: Toshiba's DVD-ROM drive (which should be available when you read this) costs \$350 and plays DVD video and audio, plus existing CD-ROMs and audio CDs, and has a 1,350K-per-second transfer rate, which is faster than today's CD-ROM drives.

On the downside, the DVD format has some compatibility issues (most are of concern mainly to developers, not consumers). DVD-ROM producers must ensure that their software works seamlessly with DVD hardware. DVD also faces the limitations in video performance. Currently, to play back MPEG video from a Mac requires hardware (usually an expansion card) to decode the MPEG file. MPEG cards do exist for certain Performatas. QuickTime, however, was just extended to handle MPEG-1, but Hollywood DVD producers are now starting to use MPEG-2, putting Apple slightly behind; you'll need a hardware add-on to see movies optimized for MPEG-2. DVD titles or CDs based on MPEG-1 should display full-screen video using the extended QuickTime on Macs with fast processors. Hardware solutions, however, will give you higher-quality video than the QuickTime software solution.) Look for more MPEG content destined for Macs.

Although you can play current CD-ROMs on your DVD-ROM drive,

there's not much DVD material available—yet. Digital Directory Assistance (800-284-8353, <<http://www.dda-inc.com>>) will put all six of its PhoneDisc CDs, which list 112 million phone numbers, on a single DVD-ROM.

Activision (310-473-9200, <<http://www.activision.com>>) has announced Spycraft: The Great Game and Muppet Treasure Island for DVD-ROM; Sumeria (415-904-0800,

<<http://www.sumeria.com>>), publisher of geography CD-ROMs, has completed the first of several DVD-ROM titles that provide exhaustive field guides to species of fish around the world and to animals and plants of Africa.

The bottom line: If you're looking for a high-performance CD-ROM drive and you have a thing for cutting-edge technology, go for it. If you're a little more conservative, you might be better off waiting a while and letting DVD grow up a bit. —DR

Apple was the first to show a DVD-ROM drive running on a computer.

REASON 29

WHY THE MAC IS BETTER THAN A PC

The Trash is easier to use. With a Mac, you can drag files and folders into the Trash and they'll remain in their original condition. With Windows 95's Recycle Bin, folders vanish (leaving only files), and items dragged in from floppy disks are erased, not just put into the bin.

BRING IN THE CLOWNS

6765 7420 6865 7865 6421

Wow! We were overwhelmed by the response to our "hexpert" quiz found in January's "Hack Your Mac" feature. We were inundated by hundreds of letters, both paper and electronic. We're still trying to figure out exactly why this particular contest was so popular so we can do it again, but we think it's a combination of having a really cool prize—Connectix's Color QuickCam with Videophone software—and a puzzle that makes you think. As Linton Valdock wrote, "I think I'm actually learning stuff by reading this magazine... pretty sneaky."

Some of you solved the puzzle the hard way. Multitasking Jay Toser was counting in hexadecimal on his fingers while cooking pancakes for his wife and actually wrote down the mapping of ASCII onto hex. I guess Jay doesn't have a CD-ROM drive, because the easiest way to translate the hex is to type it into a ResEdit file and watch the ASCII magically appear, as shown on page 42 of the article.

Plenty of readers sent us the printouts from using this method. Although all we

really needed was the secret code "clown around," we loved Ric Bayless' Goo'ed face and all the rest of your drawings of clowns. Gavin St. Ours of Boyds, Maryland, was the name drawn randomly from the hundreds of correct entries. Congratulations, Gavin!

Oh, and private to Eric D.: Just how old do you think we are? Antonio B.: In the

future, address your entry to the right people (us), otherwise some company might call you a "bright" reader. Brett M.: Thanks for the nifty sticker. Greg H.: Cool postcard. Gary T.: Nice packaging, but

you're supposed to keep your *MacAddict* covers intact. Conan M.: We hope you get paid for your illustrations.

Unfortunately, you didn't fare too well in January's other contest, in which we asked you to match *MacAddict's* staff with our hard disk names. We guess you just need a few more issues to get to know us better. Cheryl England calls her Mac Mr. Peabody because he's the brains of the operation. Joodle

Doodle was Judy Lewenthal's childhood nickname. As Frank Echler (Nikki's father) said, "I knew yours was Me, Myself, and Mine because you're so greedy and selfish." David Reynolds has SoundMaster installed, and you can hear "I'm sorry, Dave, I'm afraid I can't do that" from his pal, Hal.

Kathy's devilish Mephisto is short for MephistAFELes. Dan "humanities degree from MIT" Turner is a big James Joyce fan, hence the partitioned Jim and Nora. New Mobile War Chronicle Gundam W fanatic Mark Simmons named his Mac after the evil organization OZ, whose members wear really cool outfits. Tom Hale now produces all of Imagine Publishing's CDs, so he named his The Mac so he wouldn't accidentally run Windows apps on it. Typography buff Ken Bousquet named his Mac after his favorite designer, Brit Neville Brody. And punster Adam Vanderhoof played on the remarkable similarity between *MacAddict* and MacAddam.

Reader Scott Van Horn of Orinda, California, came closest, matching 6 out of 10 correctly. One other reader tied his score, but *MacAddict's* random picker picked Scott. Mr. Van Horn will get no work done in the months to come as he battles the Orcs for the Dark Portal in Blizzard Entertainment's Warcraft Battlechest. —KT

"I think I'm actually learning stuff by reading this magazine... pretty sneaky."

—Linton Valdock

QUICKTIME 2.5 FOR (GASP!) WINDOWS

KIDS LOVE IT! BUT WHAT DO THEY KNOW?

Even the most virulent anti-Mac troll will allow that Video for Windows (the Wintel standard for movies) wasn't the greatest. This same troll never hesitated to install QuickTime for Windows 2.1.2 on a Pentium box, especially since almost all desirable games and applications require it. Now Apple is moving further to cement this cross-platform standard by developing QuickTime 2.5—the most current version available on the Mac—for Windows 95 and NT. The list of this endeavor's endorsees fills a page of single-typed text and includes major vendors such as Adobe, Brøderbund, and Macromedia. The ultimate goal is to make the QuickTime Media Layer the one true way to develop, distribute, and play mixed media such as video, audio, 3D graphics, and text.

Technical advances in QuickTime 2.5 are legion, but one of the most interesting, as far as real-world consequences are concerned, is that QuickTime 2.5 for Windows will make QuickTime authoring viable on the PC. Previously, if a company wanted its PC product to work with QuickTime, it took an enormous effort. The best example is how Adobe had to wrestle Premiere for the PC into shape. Now, all software makers will have to do is incorporate QuickTime technology—something they're well familiar with by now—to create applications that will churn out QuickTime products which will play consistently across multiple platforms. In a way, people will be producing not for a Windows, Mac, or Unix platform, but for a QuickTime platform.

At first this may seem a blow against the Mac, but there are a number of ways this can actually strengthen Apple's position. First, owning an industry standard never hurt. Although the PC will become a viable authoring platform, it still won't match the Mac in terms of power and true color. Second, QuickTime for the Mac will, at least for the foreseeable future, remain ahead of QuickTime for Windows in terms of features and functionality.

Another interesting twist is QuickTime 2.5's support for QuickDraw 3D and 3DMF files. There is no de facto 3D object standard on the PC side—until now, perhaps. With the increasing importance of 3D in everything from educational applications to games (of course), and Strata, Specular International, Electric Image, and more vendors adding 3DMF export to their programs, this could create a whole new locked-in constituency for Apple. —DDT



cravings

Pinch yourself—they're not dreams, although they're awfully dreamy.

Podeum

Rach

So you and your PowerBook ride in to clean up this one-operating-system town, wah-hah, and nobody'd better stand in your way, or there'll be a bootup. That is, if you don't lose your grip on your PowerBook 1400 while typing your cleanup plan, which can be especially challenging while cantering along on the back of a roan stallion and singing a Gene Autrey tune. Fear no more, cowboys and cowgirls. Help is here. For \$79.95—a mere fistful of dollars—you can strap your 'Book to your leg within easy reach for those high noon

A HOLSTER FOR YOUR POWERBOOK, PILGRIM.

dates. You get not only the Podeum case but also a rain hood (for those damp nights by the Sierra Madre), a shoulder strap (convenient for hands-free six-shooter access at the OK Corral), and six removable Velcro buttons to attach your PowerBook to your Podeum. Show your true grit and call 800-942-4902, or surf to <http://www.podeum.com> to find out more.



IBVA System

IBVA Technologies



When Dionne Warwick goes to bed at night, she has a recurring nightmare involving a bag of Fritos, some road reflectors, and Vic Tayback...no, wait. That's *my* problem. Dionne's sleepless nights come from thinking about the IBVA (Interactive Brainwave Visual Analyzer) System. After all, the IBVA System, like your psychic friends, reads brain waves, but instead of giving you information about family, friends, fortune, or Vic Tayback, it instead uses an EEG headband, transmitter, and software to listen to your brain. The system comes with a few basic brain-controlled software kits. With the purchase of a variety of kits, you can control games (with the Video Game Expansion Pak), change the channel on infrared devices such as TVs, VCRs, and CD players (through the Infrared Expansion Pak), or control various parts of your house (with the X-10 Expansion Pak). At \$2,295 for the IBVA System 2 (which includes some software to let you start brain wave experiments right away), the system may even be cheaper than calling Dionne Warwick. And that's enough to keep anyone up at night. Contact IBVA Technologies at 212-754-4282, or go to <http://www.opendoor.com/pagoda/ibva.html> for more information.

YOUR MACINTOSH PSYCHIC PAL.

LCS 2408 Subwoofer

Labtec

That darn German shepherd across the alley has ruined another night's sleep with its incessant barking. It seems there's an orange tabby that likes to torment the pooch by walking along the fence just out of reach. Every night. Oh, sure, you'd approach the dog's owner about this, but, well, he's awfully big. The cat's owner has threatened to call Jim "Garfield the cat" Davis' lawyer if you even *think* about doing anything to the cat.

THAT RUMBLE—DISTANT THUNDER?

What's a sleep lover to do? Why, invest \$69.99 in Labtec's LCS 2408 Universal Subwoofer and play back those digitized thunder audio samples from your trip to the Midwest last summer. The dog and cat both will believe a storm is coming (what with that big bass rumble), and they'll return to their own homes to avoid the rain. You'll be snoozing away in no time, and there'll be no pesky SPCA protesters outside your door in the morning. Just be careful not to shake the plaster loose from your ceiling with all the bass. To hear more, call 360-896-2000, or point your browser to <http://www.labtec.com>.



BeHere camera

BeHere

Remember when Mom said she had eyes in the back of her head, and your older sister picked up on it, telling you that your parents were actually aliens and that they were going to turn you into one, too, while you slept? Remember not sleeping for days, wondering when it was going to happen and how you could hide from someone with eyes back there? Well, you survived, but you still wonder what it would be like

KNOW WHAT IT'S LIKE TO HAVE 'MOM EYES'.

to have been made into an alien that could see in

all 360 degrees at once. Now's your chance to find out with the BeHere camera system and \$4,995. The camera lens lets you take QuickTime VR images without having to stitch together several separate photographs, and besides, it looks really cool and futuristic. The Associated Press used the BeHere system to photograph President Clinton's inauguration, if you need more convincing, but the *coup de grâce* will be when you give your sister a 360-degree photograph of your family home and tell her that Mom took it. Call 408-399-1905, or go to <http://www.behere.com> for a little sibling revenge and a killer piece of technology.



cravings

NoHands Mouse

Hunter Digital



When you were little, you used the sewing machine pedal as a gas pedal, driving that Singer as fast as it would go—that is, until the needle snapped over a pin and the motor overheated. No need to delve into the fire department's visit and your subsequent grounding. The NoHands Mouse recalls those glowing days, but without the fire danger. By using one pedal for mouse control and the other for clicking, you keep your hands free to work with the keyboard—no more hassles switching between the keys and the mouse, that biggest of all time wasters (except for computer solitaire). Because the NoHands mouse is made of heavy-duty injection-molded plastic, you can tap your feet to music without fear of mouse breakage; the only thing to watch out for will be the careening cursor when you listen to *Flight of the Bumblebee*. And for a mere \$259, the NoHands mouse brings all this under your desk. To find out about the mouse designed to be stepped on, call 800-576-6873, or go to <http://www.footmouse.com>.

BECOME A DIGITAL GREGORY HINES.

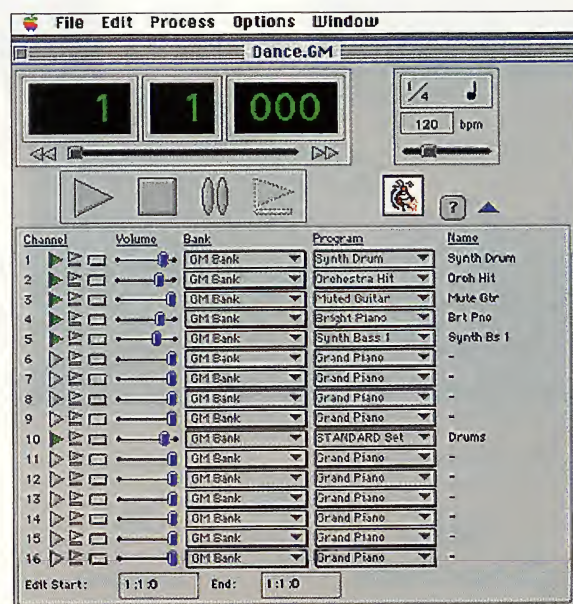
CyberSound Studio

InVision Interactive

For years you've repressed your true calling to be a keyboard virtuoso. But you've followed others' callings. Herbie Hancock won't return your calls. Peter Gabriel has threatened a restraining order. And Howard Jones, well, let's just say he won't be dropping by anytime soon. It's time to suck it up and jump into the wild world of digital music, and what better way to start than with the CyberSound Studio. For a mere \$99.95 (less than a hundred bucks!), CyberSound

MUSIC FOR THE MASSES.

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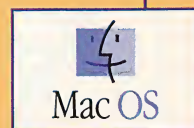


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rhapsody

Rhapsody



The Soul of the Machine

by David Reynolds

K. BOUSQUET

The Macintosh operating system has always been the soul of this stylish machine. Without it, your Mac is no better than a well-designed, tightly integrated rock with a mouse attached. Problem is, the Mac OS hasn't had a total makeover since 1984. Although that continuity allows machines manufactured 10 years ago to run current System software, this remarkable compatibility carries a price. System 7.6 strains under the weight of 13 years of new features, rewritten routines, and programming language changes; its foundation has not changed to support all this weight. And that's a problem, because many other operating systems on the market have more modern foundations and offer better stability, speed, responsiveness, and flexibility.

Apple has been on a quest to remake the Mac's soul for several years. Even before System 7 came out, Apple was looking into a new operating system, first Pink (which Apple and IBM spun off into a separate company, Taligent), and then Copland and Gershwin. As release dates slipped, the next-generation Mac operating system began to look like a distant mirage, and some people questioned whether a modern operating system would ever come to the Mac. When it became evident that the Copland project (aka Mac OS 8) was hopelessly stalled, Apple decided to look outside for help.

Apple finally has a plan that looks as though it will bear fruit. Apple purchased NeXT Software for \$400 million just before Christmas 1996. The company plans to use NeXT's Openstep operating system (formerly known as NeXTstep) as the base for the Mac's newest operating system, code-named Rhapsody. Yes, Rhapsody will be able to run most Mac OS 7.x applications. Yes, Rhapsody will have many elements of the Mac OS interface. Yes, Rhapsody will run on currently shipping Macs. Other than that, not much has been settled about exactly how Rhapsody will look, feel, and work. But we should know soon. Apple is pursuing an aggressive release strategy with Rhapsody, promising a developer release as early as this summer, with a consumer release to follow by very early 1998.

Getting Into Rhapsody

Many of the differences between Rhapsody and Mac OS 7.x are architectural. Apple and NeXT will put Openstep on top of a kernel (a core piece of system software that handles low-level functions) that runs on PowerPC chips, add a compatibility box for Mac OS 7.x applications, and give it a Mac-like interface. (As of late January, Apple hadn't decided which kernel to use.) Rhapsody will have all the buzzwords. Unlike Mac OS 7.x, Rhapsody will have preemptive multitasking, symmetric multiprocessing, multithreading, and protected memory.

So what does all that mean, and why should you care? Taken together, it means that your Mac will be more responsive, more stable, and easier to modify (without "breaking" applications; that is, without causing the System to no longer work with previously compatible programs) than Mac OS 7.x ever will be. Rhapsody's kernel will be the core of the operating system. It takes care of basic system functions, such as input, output, and low-level memory operations. Being based on a kernel allows the system to be modified without breaking existing applications. Currently, if engineers change the way Mac OS 7.x performs these functions, they run the risk of breaking a lot of applications. A kernel also makes the system more easily ported to other hardware platforms.

Rhapsody's Key Points

Confused about Rhapsody, Apple's new operating system? Here's the scoop. Rhapsody will:

- Run Mac OS 7.x applications (both 680x0 and PowerPC native) that do not talk directly to hardware.
- Run on currently shipping (and future) Power Macintoshes, clones, and PowerPC Platform machines.
- Ship within a year.
- Be more responsive and more stable than Mac OS 7.x.
- Include key Apple technologies (such as QuickTime and OpenDoc).
- In final form, have the Mac look and feel.
- Provide new capabilities, such as Java integration and easy application development.

The Players

Apple

With Copland, Apple attempted to cross the bridge between an operating system that has, at its core, technology developed in 1984 and a modern OS. This involved rewriting the thousands of Mac Toolbox calls without breaking current applications—after all, Apple is known for its compatibility. This turned out to be more difficult than anticipated. Add to that employee morale problems and Copland foundered. Apple looked to outside sources.

Apple has been working on an OS to supplant System 7 since 1989. Pink, which evolved into Taligent and then disappeared, was supposed to be that system and was meant to run on multiple platforms. No luck there.

NeXT

NeXT, founded by Apple cofounder Steve Jobs, has had an operating system in release since 1985, will live on in the form of its software products, Openstep and WebObjects. Apple will continue to sell these products "for as long as it makes sense." Because of Openstep's design as a cross-platform environment, Apple gains some credibility across hardware platforms.

Openstep has great things going for it. Under Openstep, programs can register with each other, and thus provide services to each other, something like the way a Web browser uses other programs to decode downloaded files or handle Telnet terminal functions.

NeXT's WebObjects technology has met with some success. In a nutshell, WebObjects allow companies to create applications that handle complex database searches, purchases, and other functions for the Web. For example, Dell Computer uses WebObjects technology in its Web site.

NeXT has many *Fortune* 100 companies as clients, which gives Apple a boost in the enterprise market. Whether this will help Apple's corporate position in the long term isn't assured.

Be

Be, founded by ex-Apple executive Jean-Louis Gassée, has been working on an operating system since 1992. The Be OS, which originally ran on proprietary hardware, was ported first to the PowerPC chip and then to Power Macs. Meant to be used by those into multimedia, the Be OS is heavily multithreaded and takes advantage of multiple processors. The Be OS was in development until this spring, when a final version that runs on Power Macs was set for release.

The Be OS has many of the same features that Openstep boasts, such as protected memory and preemptive multitasking. The Be OS also has something that Apple is working on—a blue box in which to run Mac OS 7.x applications. Still under development by Fredlabs, the VirtualMac will allow Be OS users to run System 7 applications under emulation while running Be OS applications at the same time. Sound familiar? VirtualMac currently doesn't emulate all of Mac OS 7. Fredlabs has said that it will finish the emulator to the point that basic productivity applications will run and print; anything beyond that is not decided.

Rumor had it that Apple was going to buy Be. It even was reported as a done deal. Instead, Apple went with NeXT as the core of its new operating system, citing NeXT's maturity. (As of this writing, the Be OS was still in development.) Don't count Be out. The company's operating system delivers right now much of what Rhapsody promises for a year from now (preemptive multitasking, symmetric multiprocessing, multithreading, an object-oriented base, protected memory, and limited Mac OS compatibility), and Power Computing has struck a deal that will bundle the Be OS with each Mac compatible that the company sells. Aimed at multimedia folks, the Be OS has a solid base and some interest among the Mac community.

Rhapsody's preemptive multitasking lets the system control how tasks are scheduled, as opposed to cooperative multitasking—the current model for the Mac OS—which lets applications decide how much time they want to give up for other processes. Preemptive multitasking makes your system more responsive. Right now, if your Mac is doing a file transfer, say, and you click on a menu, you may see a delay as the System waits for the application to give up control. Under preemptive multitasking, a system simply takes control when you click on a menu. No delay.

Another piece of system responsiveness that's often confused with preemptive multitasking is multithreading. A multithreaded operating system is able to spawn several "threads," which handle multiple operations in parallel. For instance, you can execute a file copy, a file delete, and a menu choice all at the same time. Rhapsody will be multithreaded (as will the Finder in Apple's next Mac OS release, code-named Tempo).

Rhapsody's symmetric multiprocessing takes advantage of multiple microprocessors to make your Mac scream; it makes sure that all the microprocessors in your Mac get a share of the processing load. The current Mac OS supports multiple processors but only in applications built for multiprocessor systems (such as Adobe Photoshop). The system software under Mac OS 7.x does not take advantage of multiple processors to handle its load. Rhapsody will.

Last, Rhapsody's protected memory ensures that if one application crashes, it won't bring down the entire system, because each application runs in its own memory area.

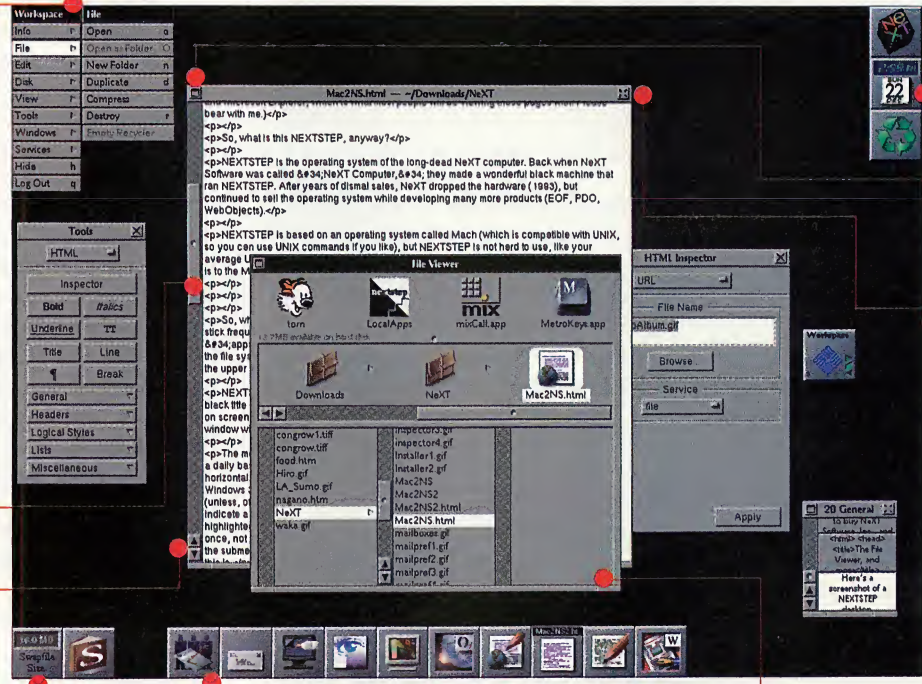


Menus are vertical, not horizontal, and they can be torn off and dragged anywhere on the screen. The triangle after a menu item indicates a submenu, while a letter indicates a key equivalent.

Scroll thumbs are proportional. They change size depending on how much of the document can't be shown because of its size. The larger the document, the smaller the thumb.

Scroll arrows are located next to each other to reduce the amount of mouse movement required to scroll in both directions.

This screenshot, taken from Thomas McCarthy's Web page which details the NeXT environment <<http://www3.pair.com/mccarthy/nextstep>>, shows some of NeXTstep's basic user interface features.



An application dock allows you to put frequently used applications here.

Minimize box allows you to collapse windows so that they take up much less space.

Close box works like a Mac close box, except the appearance indicates whether or not a file has been saved. This box with its incomplete "x" lines indicates that the file has not been saved; a completed "x" indicates a file has been saved.

Swap file indicates how much hard disk space is being used as virtual memory. This system is similar in concept to how Photoshop uses its scratch disk.

Running applications are shown here "docked" to the bottom of the screen.

The file browser is NeXTstep's equivalent to the Mac's Finder. Users use this to find the files they want to use; the browser shows the file's path.

Crashing applications can't stomp all over other applications' (or the System's) memory space, which will keep your Mac chugging along. Pretty cool.

How Will It Look?

Apple has said that Rhapsody will have an "advanced Macintosh look and feel." Nobody knows exactly what that means, at least not yet, but Apple has said that it will "be closer in look and feel to the Mac OS Finder" than to Openstep. What it probably means is that engineers will bring the best of the Mac OS user interface over to Rhapsody, then add user interface elements from Openstep and other elements that they will create. For a look at some of the noteworthy aspects of Openstep, see above.

Apple says that Rhapsody's user interface probably will resemble whatever version of the Mac OS is available at that time. The

developer release will probably look a lot like Openstep's interface with some tweaks. As Rhapsody approaches final release, it will resemble the Mac OS more and more.

Compatibility Test

Fear not, loyal Mac OSers. Rhapsody will run most existing Mac OS applications. Rhapsody will boast a "blue box," which will

Fear not, loyal Mac OSers. Rhapsody will run most existing Mac OS applications.

run Mac OS 7.x applications; a "yellow box," which will run applications written specifically for Rhapsody (as well as applications written for Openstep, although developers will have to recompile them); and a Java virtual machine, which will run applications written in Java. Although this sounds complicated (and it is,

when you get into the guts), it won't appear complicated when you use it. You should be able to run blue-box, yellow-box, and Java applications all at the same time on the same Mac. You will be restricted when you want to share information between applications in the blue box and those in the yellow box because of stability. If this segregation didn't exist, then an errant blue-box application could bring down the entire system, which blows the benefits of protected memory. At minimum, you will be able to copy and paste between blue-box and yellow-box applications. Apple doesn't know yet whether drag and drop will work between the two environments, but it may be possible. Apple Events will play an important role in how blue-box and yellow-box applications communicate with each other.

As now planned, all Mac OS 7.x applications will run in a compatibility environment, which will appear in a single window in its

What We Know You'll Get

MAC OS 7.X COMPATIBILITY—Most Mac OS 7.x applications will work just fine with Rhapsody.

HARDWARE COMPATIBILITY—Rhapsody will run on all currently sold Macs and Mac compatibles, and it will run on all future Macs (including PowerPC Platform computers).

A SPEEDIER, MORE STABLE, RESPONSIVE SYSTEM—Due to symmetric multiprocessing, multithreading, protected memory, and preemptive multitasking, Rhapsody will be snappy.

APPLE TECHNOLOGIES—The QuickTime Media Layer, Open Transport, and OpenDoc will make it into Rhapsody.

JAVA—Rhapsody will have its own Java virtual machine to run Java applications.

ADVANCED MACINTOSH LOOK AND FEEL—Whatever that means. Apple has committed to keeping a Mac-like user interface.

What We Don't Know About...Yet

HOW MAC OS 7.X COMPATIBILITY WILL WORK—Will users be able to tell the difference between Mac OS 7.x applications and Rhapsody applications? Most likely, because Mac OS 7.x applications will have to be isolated (probably in their own window and definitely in their own memory) from Rhapsody applications in order to make sure that memory protection works properly.

WHETHER RHAPSODY WILL WORK WITH OTHER HARDWARE—Folks at Apple have said NuBus-based Power Macs might be able to run Rhapsody. We've heard speculation that Rhapsody could be ported to Intel's x86 chips or Motorola's 680x0 chips (minus the Mac OS 7.x compatibility part), but no plans have been announced.

WHAT APPLE TECHNOLOGIES WILL BE BROUGHT OVER—Although a few key Apple technologies have been singled out, not all of them have had their fates decided. Aside from Meta Content Format (HotSauce), QuickTime, OpenDoc, and Open Transport, little has been said.

HOW SOON MAJOR APPLICATIONS WILL BE PORTED TO RHAPSODY—Apple has said that major Rhapsody-native applications could appear within a year, but no formal time tables have been set, and no developers (other than Netscape) have commented publicly. Don't expect much on that front before 1998 (but do look for new applications to appear from small developers and old NeXTstep hands).

HOW RHAPSODY AND MAC OS 7.X WILL MAKE IT ONTO YOUR DESKTOP—Apple has said that Rhapsody and Mac OS 7.x both will be bundled with new Macs and that it will see who is using what before deciding how to distribute Rhapsody.

HOW GAMES WILL WORK—Games depend on a quick graphics system, and many game developers like to be able to take over the entire machine to get the most out of the system. Under preemptive multitasking, developers will not be able to take over the Mac, and it's not clear how quickly Display PostScript will be able to render images on the screen. NeXT says Rhapsody will have a screen buffering system that allows faster screen redraw.

WHAT THE USER INTERFACE WILL LOOK LIKE—Although Apple has committed to a Mac-like user interface, it hasn't said how closely Rhapsody will resemble Mac OS 7.x. It may contain several Openstep elements, and it may also contain some completely new items. Don't expect the developer release to look much like the Mac OS.

own protected memory space (for stability's sake) when launched in Rhapsody. A crashing Mac OS 7.x application won't take the entire system down but may bring the compatibility box down. Apple says that Mac OS 7.x compatibility should perform as well as, or better than, the then-current Mac OS, partially because this compatibility will not be provided by emulation (such as in Insignia's SoftWindows or 680x0 code on PowerPC Macs). Instead, Apple will port the Mac OS to run on top of the kernel.

Most current Mac applications, plug-ins, and desk accessories will work with Rhapsody. Many extensions will work, but they will modify only the Mac OS 7.x compatibility box. For example, the Aaron extension would modify only the appearance of items in the compatibility window. Any extension that talks directly to hardware (such as some device drivers) or provides universal services (such as file compression extensions) will not work. Control panels and Chooser extensions should work, provided they don't load in the same way extensions do. If they do, they face the restrictions listed above. Installers, fonts, and sounds should work fine, as should printer drivers that don't talk to the hardware.

Apple will move many of its best technologies to Rhapsody: QuickTime, OpenDoc, Open Transport (including TCP/IP support), Apple Events, and the Meta Content Format (known also as HotSauce). Parts of other technologies, such as QuickDraw GX, will be used to complement what's already built into Rhapsody via NeXT's technology. A much-improved version of virtual memory will also appear in Rhapsody (a demand-paged system, for you propeller heads out there); hard disk space will be used for RAM as needed, so you won't have to set a predetermined chunk of virtual memory in a memory control panel and then restart your Mac.

Rhapsody, although it will have its own Mac OS 7.x compatibility, will be able to live with the actual Mac OS 7.x on the same hard drive in peace. After installation, you will be able to choose at startup which system you want to use. (For example, if you want to use a Mac OS 7.x application that broke in Rhapsody, or if you just don't like the term "yellow box.")

Rhapsody will offer Java through a Java virtual machine. Applications written in Java will run under Rhapsody with little or no modification. As Java becomes more widely accepted among developers, and as more useful applications are built in Java, Rhapsody users will have more applications available.

Although the Apple-NeXT consolidation has brought modern operating system technology to the mothership, the companies need to work out some details. It's not clear what Rhapsody will use to draw images on the screen, but a likely candidate is Display PostScript, as that's what is already built into Openstep. Apple will use some of QuickDraw GX in Rhapsody to expand Display PostScript. Display PostScript is the ultimate WYSIWYG. Its accuracy is limited only by the monitor, because the same information is used to render both the image on the screen and the image that goes to the printer. Rhapsody will have some additional abilities (such as screen buffering) that will speed onscreen drawing for programs such as multimedia and games.

Will It Run on My Mac?

Maybe. Apple has committed to making Rhapsody run on all Macs sold today—essentially all PCI-based Power Macs—as well as PowerPC Platform machines when they become available. Apple hasn't ruled out making Rhapsody available on NuBus-based Power Macs, but the company isn't making any promises, either. Apple says it will have to see how the engineering goes and make decisions at that time. Because Openstep is available for a variety of processors, it's possible that a version of Rhapsody will appear on other platforms. However, Apple has stated that the Mac OS 7.x compatibility environment will run only on PowerPC chips, not Intel chips.

Rhapsody will be available soon. Apple plans to phase in Rhapsody over three releases: The first, a developer release, will be available in mid- to late 1997; the second, the premiere release with partial Mac OS 7.x compatibility, will be publicly available by January 1998; the third, the unified release with full Mac OS 7.x compatibility, will follow in mid-1998.

This schedule is aggressive. Common Silicon Valley wisdom holds that it takes five years to develop an operating system. Through NeXT's technology, Apple is hoping to do it in a year and a half. That pace is even more impressive when compared with plans for Copland (Apple's in-house operating system project). Copland, which promised limited memory protection and multitasking, was delayed from a 1996 ship date to a 1998 ship date before it was scrapped. Rhapsody jumps past Copland in terms of functions, and it should be available within a year. Parts of Copland will live on in Rhapsody's blue box and in Mac OS 7.x.

How likely is it that the combined forces of NeXT and Apple can deliver Rhapsody on time? Pretty likely. For the developer release, Apple needs to choose the kernel on which to base Rhapsody, and then get it up and run-

date, don't expect the delay to be long.

Of Programs and Developers

Back when the Mac first pulled electrons through an outlet, Apple engineers designed the Macintosh Toolbox to work with Pascal,

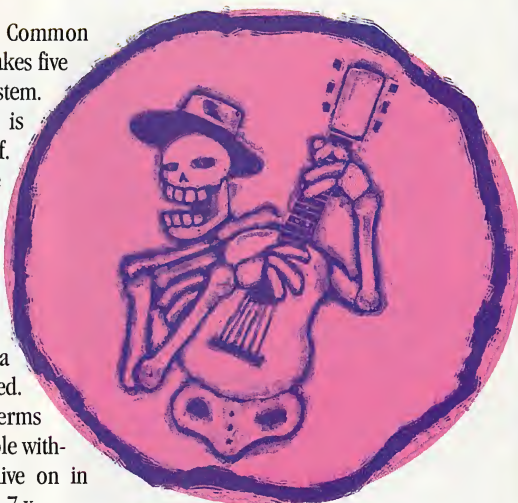
which was one of the most popular programming languages of its day. The Macintosh Toolbox (most of which lives on a ROM chip inside your Mac) helps developers by doing some of the routine tasks, such as drawing windows and handling menus. Developers don't have to worry about the basics and can concentrate on writing the core of their applications, calling Toolbox routines when they need them. Programming for the Mac, however, has become more complex, because the Mac Toolbox has grown from a few hundred functions to a few thousand, and programming languages have changed over the years. Programmers now can choose from Pascal, C, C++, and Java (among others) to create Mac applications.

Rhapsody will use the Openstep Application Programming Interface (API), which means that instead of using the Mac Toolbox, programmers will use Openstep calls. These calls are based on Objective C, an object-oriented flavor of the C programming language (but Apple has said that developers will be able to use the language of their choice when developing for Rhapsody). This object-oriented base for Rhapsody has benefits for

...it takes five years to develop an operating system...Apple hopes to do it in a year and a half

ning on PowerPC Macs (complete with device drivers, which allow the central processing unit to talk to all the peripherals attached to it). Because of a kernel's relative simplicity, getting one up and running is among the easier tasks for an engineer (as opposed to porting all of the Mac OS). A couple of factors help this effort. NeXT understands porting operating systems to other hardware platforms, having ported Openstep to run on Intel PCs, NeXTcubes, and Sun Microsystems' Sparc chip. NeXT ported Openstep to Microsoft Windows NT in less than a year.

In addition, NeXT had Openstep running on a PowerPC-based prototype computer a few years ago, so the company has experience with the architecture. Tackling the device drivers (the bits of software that control peripherals such as hard disks) may slow the effort, but NeXT has been writing drivers for Intel machines since 1993, and the company has a driver kit that helps speed driver development. If Rhapsody misses its release



What Apple Gets for \$400 Million

Four hundred million dollars is a lot of money, you may say, but Apple got a bushel of technologies and people in the deal. Here's a rundown:

STEVE JOBS—Jobs' return to Apple will provide much-needed charisma and a public relations shot in the arm as the prodigal son returns. Other than that, it's not clear what role Jobs will play at Apple.

OPENSTEP—Apple gets NeXT's modern operating system to use as the basis for its next-generation OS.

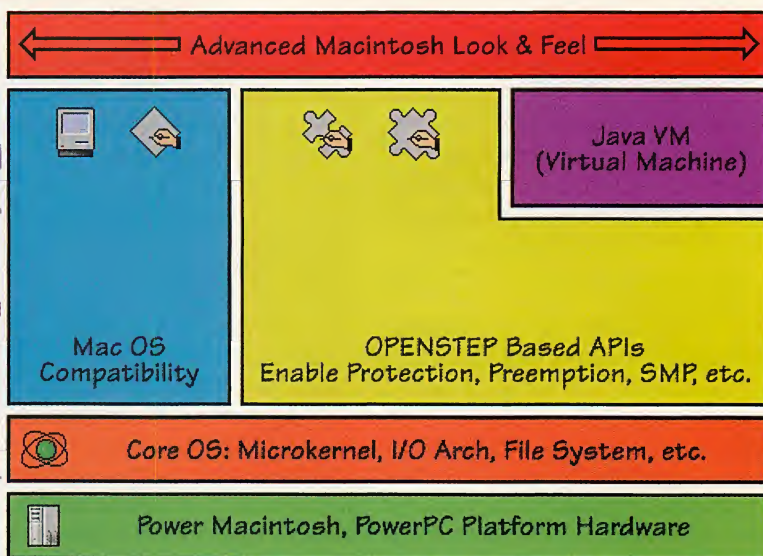
WEBOBJECTS—WebObjects are NeXT's newest, hottest commodity, developed when NeXT needed something to keep the company valuable. With WebObjects, users can create applications that integrate databases, browsers, and users on the Web—all with a drag-and-drop interface.

CORPORATE CREDIBILITY—Although NeXT didn't take corporate America by storm, it has some impressive customers, including AT&T Wireless, Dell Computer, Merrill Lynch, Nissan Motor, and the U.S. Postal Service. This may help Apple keep some of its corporate accounts and perhaps even win some new ones.

OBJECT-ORIENTED TECHNOLOGY—Aside from Openstep and WebObjects, Apple lands a bunch of prebuilt code for use in its technologies.

TALENTED INDIVIDUALS—NeXT brings 100 talented engineers with it into Apple's fold, including Avadis Tevanian, NeXT's vice president of engineering. Tevanian lists lead designer and engineer of the Mach OS (a kernel) among his credits.

ANOTHER REVENUE STREAM—Apple will continue to sell Openstep and WebObjects "for as long as it makes sense." Ironically, the primary buyers for these two technologies will be people using x86- and Sparc-based machines.



Rhapsody's blue box and yellow box terms come from the system's architectural diagram, which shows how Rhapsody will be put together from top to bottom.

developers. In an object-oriented language, programmers can work more efficiently by using and reusing code chunks. To create a window with Openstep, all a developer has to do is create a window object and then tell it to draw itself. This simplicity should make it easier for developers to write applications for Rhapsody. As a side benefit, developers who conform to the Openstep API will also be able to run their applications on other platforms, such as Intel- and Sparc-based computers that run Openstep.

When will Rhapsody users see programs written specifically for Rhapsody?

Major applications probably won't be made Rhapsody native for at least a year. The big folks are taking a wait-and-see attitude, giving the young Rhapsody time to mature a bit before making a decision. Many want to make sure that Apple can deliver, and they have the luxury of time in which to do so. After all, most applications will still run in Rhapsody's blue box as they do under Mac OS 7.x.

A couple of sticking points need to be addressed before developers will commit to Rhapsody. Many developers of established applications (especially cross-platform applications) maintain

a common code base, which means that at the highest levels, a given application's code looks the same whether it's on Mac, Windows, or another platform. Developers are loathe to give up this single code base to create and maintain separate code bases. If Apple introduces a way to convert existing code and resources to Rhapsody, expect established developers to move more quickly. Metrowerks has acquired the Latitude Group, whose product will be the basis for a system that developers can use to port existing Mac OS 7.x applications to Rhapsody more quickly. Altura Software also has announced plans to release a tool to port Mac OS 7.x applications. Netscape is an exception to the wait-and-see developers; it announced that it will develop Netscape



Communicator for Rhapsody.

If large developers are slow to move to Rhapsody, the gap may create great opportunities for new developers. Creating an application from scratch is easier using Openstep than it is using the Mac Toolbox because of Openstep's object-oriented nature. Want a simple word processor? Just open up an application builder, drag on a place to put text, drag on a font menu, and Openstep

takes care of the rest. An experienced Openstep developer could create such a word processor in less than a minute, without writing a single line of code. This ability to create new applications quickly is what may bring some Rhapsody-native applications quickly to the market.

"The Mac developers are about to be introduced to a universe that they didn't know existed," says Kevin Tauber, president

and CEO of ThoughtPort, a company that develops applications for corporations and individuals. Tauber speaks of a demo of which he used to be a part: Using NeXTstep, engineers would create a program that could do everything that WordPerfect could do, including read and write WordPerfect files—in 45 minutes, start to finish.

Kevin Crowder, chief architect at Macromedia, developed Virtuoso, an applica-

Buzzwords Debuzzed

API—Application Programming Interface. This is the collection of functions that helps developers so they don't have to write all the code to create an application. On the Mac, for example, developers don't have to draw every single pixel to create a window. Instead, they use functions that talk to the Mac Toolbox's window manager, and the window manager in turn draws the window for the programmer. By having a collection of functions available, the programmer saves time, and can be assured that the application is more stable and consistent.

BLUE BOX—The part of Rhapsody that will run Mac OS 7.x applications. The blue box should be as fast as Mac OS 7.x, and Apple says it will run all 680x0 and PowerPC applications that don't talk directly to the hardware. Few applications do that, so the blue box should run most existing applications.

COOPERATIVE MULTITASKING—Mac OS 7.x uses cooperative multitasking to allow users to do more than one thing at a time. Programmers specify the amount of time that their applications are willing to give up, as opposed to the System just taking the time it needs.

KERNEL—The name gives a hint. A kernel is at the core of an operating system, and it provides a layer between the rest of the operating system and the hardware. It handles functions such as input, output, and memory at a low level. The rest of the operating system talks to the kernel through a set of interface functions, and the kernel makes things happen. This is good, because engineers can make changes to the kernel, and as long as the interface functions remain the same, the rest of the System (and all its applications) shouldn't notice the difference. Being based on a kernel also means that the operating system and all the applications that run on it can be easily ported to different hardware platforms. A microkernel is a simpler, smaller version of the kernel and covers fewer functions.

MULTITHREADING—A way of handling multiple tasks. The

system or application spawns multiple "threads," which allow the computer to perform operations in parallel. Background printing is an example. The Tempo Finder will be multithreaded, allowing multiple copies, deletes, and other operations. Multithreading works (along with preemptive multitasking) to provide a responsive system.

OBJECT-ORIENTED PROGRAMMING—This is a "new" way to program that involves creating objects and then sending them messages. Object-oriented programming allows programmers to reuse code instead of having to write it each time they want to use it, saving them time and effort.

PREEMPTIVE MULTITASKING—A scheme that allows the system to determine how applications share the microprocessor. Under preemptive multitasking, the system looks at everything that's happening, such as menu selections and file copies. It then assigns a priority level to each event. Thus, the menu selection is handled at a higher priority level than the file copy.

PROTECTED MEMORY—This makes your Mac more stable by providing each program with its own memory space that others can't enter. An errant program can't stomp all over another's (or the system's) memory. If one program crashes under protected memory, the system typically doesn't need to be restarted.

SYMMETRIC MULTIPROCESSING—For Macs with more than one processor, this is a way of scheduling which processors handle the tasks. In symmetric multiprocessing, the processing load is spread roughly equally across all available processors. Using DayStar Digital's API, applications written to take advantage of the API under Mac OS 7.x can do symmetric multiprocessing, but the system itself is limited to one processor.

YELLOW BOX—This is where applications written to conform to the Rhapsody API run. It also includes the Java virtual machine, which allows Java applications to run in Rhapsody.

How the Deal Was Done

Although Apple has been looking for its operating system technology among several possible candidates, it seems all the planets were aligned for the deal with NeXT. Back in the summer of 1996, John Landwehr, product marketing manager at NeXT Software, saw that Apple was working on a version of MkLinux, a Unix operating system with a Mach kernel, for the Macintosh. Openstep is also based on the Mach kernel, which led Landwehr to pay attention. When he saw that Apple was looking at Be as a possible technology source, he called Apple, thinking the company might be interested in NeXT's technology. Ellen Hancock, Apple's chief technical officer, returned Landwehr's call, and the two companies started talking technology. A couple of days before Thanksgiving, three people from Apple came to visit NeXT, where only Landwehr and three other NeXT employees knew about the discussions with Apple. Steve Jobs called NeXT when the Apple entourage came to visit and was speechless when Landwehr told him who was in the boardroom, but not for the reasons you might expect. Jobs had been speaking with Apple in separate—but parallel—discussions.

At first, the two companies discussed licensing NeXT's technology. Apple asked lots of questions about all the buzzword technologies that NeXT had. NeXT had been getting its financial statements in order (company worth, revenue, and so on), as the company planned to take its stock public in an initial public offering early in 1997. When Apple heard about this, the discussions turned to the purchase of NeXT. Apple poked and prodded, did a source code review (which gave Apple a good idea about how Openstep was built and what kind of care went into its programming), and Jobs and Apple chief Gil Amelio negotiated the purchase. And that's how NeXT came to be an Apple company.

tion based on FreeHand for NeXTstep a few years back. Although he couldn't discuss development for the current version of Openstep (or Rhapsody, for that matter), he can provide some enlightenment about NeXTstep. "I found [NeXTstep] pretty easy to develop for," Crowder says. "The user interface kit is probably the best I've been exposed to." Given the hypothetical case of writing a medium-size application, Crowder says that doing the user interface would take

about half as much time to do with NeXT's object-oriented technology as with the Mac Toolbox,

and that testing prototypes is much easier with NeXTstep than with the Mac. Because about 60 percent of writing an average application is user interface work (the other 40 percent is the core of the application that does the actual work), using NeXT's technology could save developers about 30 percent of the time they now spend writing an application. Others note that porting an application to Openstep has not been that easy.

Crowder says that writing in an object-oriented environment takes a different mindset but that once you get it, it's not difficult. "People who've used [Metrowerks'] PowerPlant or another object-oriented [development] framework probably wouldn't have any problems developing for NeXTstep."

Don't forget the NeXT developers already out there. Those who have an application currently running on Openstep need only recompile their applications (a process that doesn't take any serious coding), and they'll have applications ready to run on Apple's brand-new operating system. NeXT has said that if developers want to get a head start on writing Rhapsody applications, they can begin by writing Openstep applications right now, then just recompile when Rhapsody is released. This requires a developer version of Openstep and the hardware to run it (a Sun Sparc- or Intel x86-based computer). Metrowerks has promised tools to help developers create Rhapsody applications. When available, Rhapsody may have new capabilities not covered by the original Openstep (such as the QuickTime Media Layer), but developers

should be able to write new functions to add those capabilities to their applications.

Apple has yet to release a strategy for moving applications to Rhapsody, although several paths are possible. Established developers will probably take a wait-and-see approach; new developers will have a wide-open field for a short time; and experienced NeXTstep/Openstep developers will have the opportunity to jump in.

The Mac developers are about to be introduced to a universe that they didn't know existed.

What About Copland?

Don't count Mac OS 7.x out yet. Although Copland didn't happen as planned, this set of bits has some life left in it, and Apple intends to keep developing it for at least two more years—most likely longer than that. Although the current release, 7.6, doesn't contain a lot of noticeable improvements, 7.7 should contain shiny new features when it ships. It will include the Copland Finder, which will be multithreaded and PowerPC native, which means it should be plenty responsive. Tempo will also include the Mac OS Runtime for Java, contextual menus, pop-up windows, spring-loaded folders, more View options, and live scrolling. Apple also offered a brief preview of systems after 7.7, which include OpenDoc integrated directly into the Finder. Open a Web page, and it opens the same as any other window. All of these enhancements should keep Mac OS 7.x alive for the foreseeable future.

Apple took a gamble buying NeXT. On the plus side, Rhapsody will be a fully modern operating system with Mac OS 7.x compatibility and cross-platform capabilities, and it looks like it will be here soon. On the minus side, it will be a new core OS, and some developers may not choose to rewrite their applications to take advantage of it. We'll start to find out in a few short months when the first developer release is available. Who knows? It may be just what Dr. Amelio ordered. ■

Associate Editor David Reynolds has gone back to school to learn about software and sit at a small desk.

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UNLOCK BRYCE'S HIDDEN SECRETS

By Steven Anzovin and Raf Anzovin

In our book, KPT Bryce 2.1 from MetaTools is one of the world's most addictive graphics applications. But it's not only Bryce's wild interface that gets you hooked. Bryce users spend an inordinate amount of time just trying to figure out how the program

works, thanks to MetaTools' ultraminimalist approach to documentation. Bryce has more undocumented features than any 10 normal applications.

In this how-to, we'll take you beyond the basics of Bryce landscaping—the mountain, cloud, and water effects that most Bryce owners figure out—and explore some of the program's less-well-known capabilities. Before you start, make sure you're using version 2.1 of Bryce, not the release version 2.0 (the

upgrade is available from MetaTools: 805-566-6200, <<http://www.metatools.com>>). Version 2.1 fixes numerous bugs, including DXF import and Boolean rendering problems, and also enables cool features such as batch processing and rendering in the background.

Main Screen

THUMBNAIL:

The Nano-Preview generates a quick thumbnail of the scene.

VIEW: Click here to select an angle for viewing your scene.

NAVIGATION AND CAMERA TOOLS:

These let you move around the scene in three dimensions. The cross-shaped buttons move the view along the x, y, and z axes; the round button rotates the view.

RENDERING OPTIONS: These are the rendering tools. Bryce renders high-quality ray-traced images or lower-quality previews and can toggle textures on and off.

CONTEXT-SENSITIVE TEXT: This area provides information about your scene or objects—for example, how many polygons are in the selected object—or alerts you to the currently selected tool.

ICON BAR: These tools select objects or groups of objects. They disappear when not needed.

TOOLBAR: Access three different palettes at the top of the screen. With the Create palette, add atmosphere, water, ground planes, terrains, and rocks; place primitives such as spheres and cubes; add PICT objects; and create lights.

ICON BAR: Customize the current wireframe or shaded view with these pop-up tools. When not needed, they disappear.



EDIT PALETTE: Click on Edit to get this palette of tools for adjusting the positions, textures, and other attributes of individual objects in the scene.



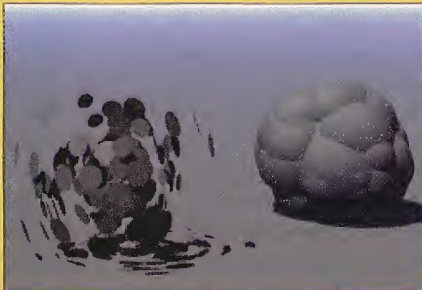
SKY&FOG PALETTE: Set atmospheric colors and various other effects in this palette.



SECRET 1 Hidden Primitives

See that fat, upright cylinder primitive in the Create menu? Click right above it to find a hidden menu of undocumented primitives: Sphere set, Disk set, Gm1 PolyHedron, Gauss, and Spike. Gm1 PolyHedron doesn't seem to work, but the others come in handy for creating certain effects, such as foliage and clouds. We've taken the Sphere and Disk sets and created a glowing ball of fiery energy. Here's how:

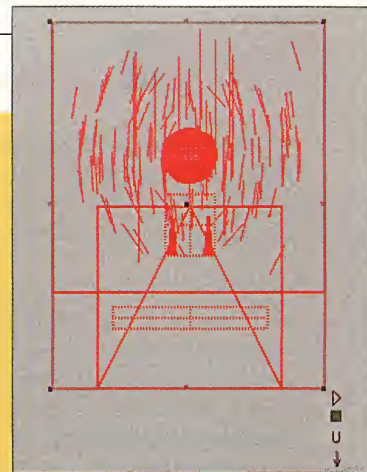
1. Create a Sphere set.
2. Double-click the sphere to access the Materials Composer. Give the sphere a preset fire texture (it's in the Complex fx set). In the pop-up menu, choose Fuzzy instead of Fuzzy Additive. This gives the fire a more intense look. Fuzzy textures are excellent for ethereal, mystical, or glowing objects.
3. Now, create a Disk set in the same location. Make it big enough to completely enclose the Sphere set.
4. Double-click on the Disk set to get to the Materials Composer again. Choose a yellow materials preset, and turn up the transparency to about 50 percent or until it looks good to you. (Originally, we intended to give this object a fuzzy texture, but, strangely enough, fuzzy textures on Disk sets don't render above the horizon line.)
5. Go back to the Create palette and place a Radial Diffuse light (the leftmost light) inside the Sphere set. Click on the *E* in its pop-down menu to see the Edit Lights box. Make it a visible light and color it orangey-red.
6. Click one of the Render buttons and stand back or you'll get singed by the fire.



HIDDEN PRIMITIVES: These two undocumented primitives are from the Disk and Sphere sets.



EDIT THE LIGHT SOURCE: Insert a visible light inside the fireball.



FIREBALL WIREFRAME: A wireframe view of the two primitives, with the Sphere set inside the Disk set.



FINAL FIREBALL: The rendered fireball.

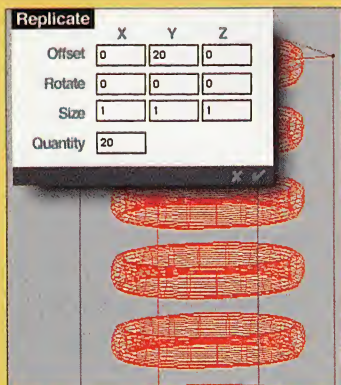
SECRET 2 Object-manipulation Tricks

There are lots of little-known object-manipulation tricks in Bryce. For example, the column of glowing tori was created by making a single torus and replicating it.

1. Click on the torus primitive to place a new torus into the scene.



TORUS WEDDING RING: A bit of Bryce whimsy, drag left to right to set the torus' thickness.



REPLICATE THE TORUS: Set the number of replications here.

2. Click on the *E* in the pop-down menu. Surprise! You'll see a spinning torus above a "wedding ring." Drag to the left or right of the spinning torus to adjust its thickness.

3. Choose Multi-Replicate from the Edit menu at the top of your monitor's screen. Here you can duplicate as many objects as you like, all a precise distance apart. Enter the values. We made 20 tori at a short offset (we used an offset of 20) along the y, or vertical, axis.

4. A column of tori will automatically appear. Select them all to perform additional operations, such as assigning a material.

6 Quick Tips

- Press Command-F to see Bryce in a normal Mac window.
- Use the arrow keys to nudge new objects (not terrains) a distance of exactly one quarter of their diameter. Pressing the Option key while you nudge gives you smaller increments.
- Press the asterisk key to enlarge selected objects by 100 percent.
- Press the backslash key to make selected objects 50 percent smaller.
- Press the plus (+) key to bring an object closer.
- Spacebar-drag anywhere on the Bryce palettes to turn them into floating palettes. Too bad MetaTools left out the standard title-bar close-box widget that closes a floating palette and restores it to its usual place. You have to reposition floating palettes yourself.

SECRET 3 Modifying Preset Textures

Bryce boasts very powerful texturing capabilities, but you'll search in vain for an adequate explanation of them in the manual or the *Deep Features Guide*. Here are hints for modifying preset materials that we discovered while texturing the forested floating rocks.

1. In Bryce, materials can change according to the slope (angle from the horizontal) or the altitude (height in the scene) of a terrain. We needed a rock material preset that was slope dependent rather than altitude dependent. Altitude-dependent materials don't work well for terrains that float high above the ground plane, just as slope-dependent materials don't work well for low, rounded terrains.

2. The Desert Rock material preset (in the Planes & Terrains set) fits the bill, but the colors are wrong for an area with vegetation. To change the colors of any material, bring up the Edit Texture box by clicking in the top channel of the material (represented by the first panel in the three-part box on the upper right).

3. This material has colors in Components A and B. Component A determines the higher slope colors; B sets the lower slope colors. Changing the colors from sandy brown-red to greenish shades gives the

terrain a more overgrown appearance. (To change colors, click a color square in the Component box to access a color palette. Click a new color and watch as Bryce rerenders a preview of the terrain.)

4. Also consider the relation of scale to texture complexity. A large object generally needs a more complex texture to match its scale. Add more detail by clicking the plus sign next to the complexity option. Play with the Turbulence options at your own risk; they're mainly for weird, abstract stuff.

5. When the material looks right, make a custom preset: Open the Presets box, click Add at bottom, and give it a new name.



BRYCE ROCK MATERIAL FINAL: A low-res render of the textured rock.

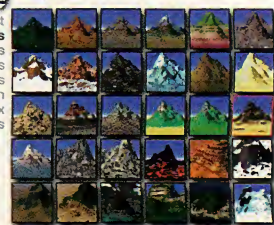
Materials Desert Rock



Smooth sand with rough rock increasing with slope.

Render Cost Index: 418

Simple & Fast
Planes & Terrains
Rocks & Stones
Liquids & Liquids
Clouds & Fogs
Wild & Fun
Complex & Miscellaneous



PRESET ROCK MATERIALS: We chose a rocky texture that changed with the slope of the terrain, not the altitude.



EDIT THE ROCK MATERIAL: We changed the colors and added complexity to the preset rock material we had chosen.

SECRET 4 Foolin' with Booleans

Bryce does Booleans—that is, it will allow you to use one object to cut a piece out of another. We used several Boolean operations to make the windowed buildings embedded in the floating rocks; the same techniques can be used to make any sort of windowed structure. Here's how we did it:

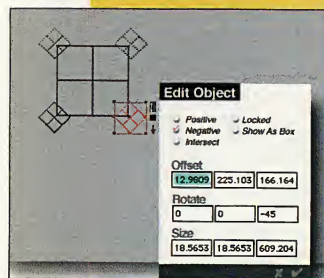
1. From the Create palette, make a rectangular box primitive. Be sure you are in wireframe view. Make the box longer than it is wide. This box is going to be the main structure of the building. Copy this "building" box and work with the copy; you'll need the original later.

2. Create another long box (we'll call it the Boolean box) that is thinner and slightly longer than the first box.

3. Now bevel the edges of the building box. Position a copy of the Boolean box so that it is exactly parallel with one edge of the building box and chops off a little of that edge. Use the rotate tool in the Edit palette to move the Boolean box into place. Enter the long box's plop-down dialog (by clicking the little arrow at the right). Make the Boolean box a negative object—that is, an invisible object that can cut parts out of any other object that intersects with it.

4. Make 11 more copies of the Boolean box (all will also be negative objects), one for each remaining edge of the building box. Place them so that they intersect the other edges of the building box in the same way. Take a look at the illustration at right, which shows how all of the boxes (plus the ones for the windows) are placed.

5. When you render, you'll see that the building box now has beveled edges.



SET BOOLEAN OPERATIONS: In the Edit Object box, click the Negative attribute to make the selected object subtract itself from any objects that it intersects.

Add Windows

1. Copy the Boolean box and make it a negative object.

2. Position it so that it pierces the building box on one side at the place you want your first window. It will also cut a window hole on the opposite side.

3. Continue placing copies of the Boolean box so that they cut holes for the rest of the windows on these two sides. Then repeat this on the two other sides.

4. Now the inside of the building box is a mess—a mess you can see through the window holes. Let's clean it up. Copy the original building box (sans negative objects), make it slightly smaller, make it a negative object, and place it inside the building box that has the window holes. The inside is now clean.

5. Let's make glass for the windows. Copy the original building box again and make it a tad smaller. Give this box a glass texture. Put it just inside the building box that has the window holes. If the glass peeks through the bevels, make the glass box smaller. Render—you've got windows.



PLACE BOOLEAN OBJECTS: This shows how all the boxes are placed before being made negative.



MAKE THEM NEGATIVE: Beveled edges and window holes are left by the negative objects.



ADD A GLASS TEXTURE: The box looks like a building.

Think you can make aliens like these in Bryce? Good luck. An easier way is to make them in a 3D modeling program and bring them into Bryce—that's what we did. Bryce 2 doesn't support 3DMF, the QuickDraw 3D metafile, but it does import the DXF 3D object file format supported by most 3D programs (such as Specular's Infini-D, Strata Studio Pro, and Macromedia Extreme 3D).

To do a standard DXF import:

1. In the 3D program, save the model in DXF format.
2. Make sure the Bryce 2 DXF Loader plug-in is in the Bryce plug-ins folder.
3. In Bryce, select Import Object from the File menu.
4. Select the DXF file and click Open.

Keep in mind that the DXF image will not include any textures it may have had in the 3D program. You'll have to give it new textures in Bryce. And you may not see all the faces of the object until you render it.

If Bryce chokes on a big DXF file, giving you an "insufficient memory" message, go back into your 3D program, reduce the patch detail of the model (in programs that allow this), resave as DXF, and reimport. If that doesn't work, separate the model into smaller pieces, import them separately, and reassemble them in Bryce.



ALIEN WIREFRAME:
Import DXF models to work with complex, organic shapes you can't make in Bryce.

ALIEN SKIN TEXTURE: These aliens need their own new material preset.



ALIEN SKIN RENDER:
Bumpiness is set on high.



Hint:

To move 3DMFs into Bryce, use a 3D program to convert them to DXF files, then import as above. Geometry and colors will come through, but textures won't.

If you're still using Bryce version 2.0, you'll have trouble importing many DXF files. Try this workaround:

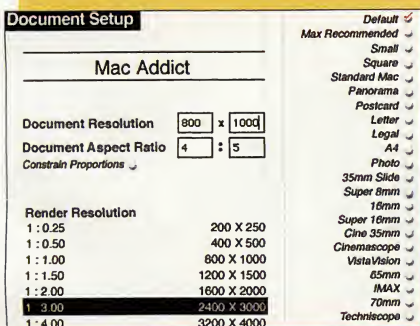
1. Open the DXF file in a text editor.
2. Look for a four-line header like this:

```
999
Flat DXF output from
0
SECTION
```

3. Delete the first two lines.
4. Save the file as plain ASCII text, then import. That should fix your problem.

Why does Bryce render at only 72 dots per inch? We don't know—go ask Kai Krause. But you can make high-resolution images, as long as you have Adobe Photoshop and heaps of RAM.

1. Figure out the pixel dimensions of the image you want to create. For example, an 8-x-10-inch, 300-dpi image has pixel dimensions of 2,400 x 3,000 (8 x 300 = 2,400; 10 x 300 = 3,000). That's roughly 33 x 42 inches at 72 dpi, but don't worry—Bryce can handle it, if your Mac can.



DOCUMENT SETUP BOX: Set up a high-res Bryce render here.

3. Using the Render Resolution allows you to set smaller pixel dimensions and reduce Bryce's RAM needs. If you enter a ratio of 1:3, you can set the pixel values to one-third—800 x 1,000 for that 8-x-10-inch, 300-dpi file. The final render will be at the proper pixel dimensions.

2. Key to the generation of high-res Bryce images is the Document Setup box, available from the File menu. Along the righthand side are numerous preset aspect ratios, but if none suit you, enter the pixel dimensions (height, width) in the Document Resolution text boxes.



FINAL HIGH-RES IMAGE: Rendered in Bryce at 1,344 x 1,008 pixels, or 18.7 x 14 inches at 72 dpi, the final image was reformatted in Photoshop to roughly 9 x 6.7 inches at 150 dpi.

4. After rendering (which will take much longer than a screen-size picture), bring the PICT file into Photoshop. Choose Image Size from the Image menu. Set the new image resolution to 300 dpi, lock the file size, and hit OK. Voilà! A high-res Bryce image, suitable for framing.



Power Lunch

3400

Champagne wishes
and caviar dreams.
And your gold card,
please.

By Nikki Echler

Photography by Aaron Lauer



Ever since Apple Computer struck out with the PowerBook 5300 in 1995, the former five-star portable computer company has been running wildly around looking for a way to match menus with its PC competitors. Although Apple managed to end one heck of a slump with the debut of the PowerBook 1400 late last year,

the company still finished the year short of a high-end model for power players who have cash to burn on ultrafast processors and megabytes of RAM. But now, as Apple uncovers the latest entry in its laptop line—the gourmet, ultraexpensive, classier-than-flowers-on-a-first-date, boardroom deluxe PowerBook 3400...the tables appear to be turned.

The PowerBook 3400 finally updates the Apple laptop line to meet, and in some ways surpass, modern-day standards set by PC portables. The base model among the four configurations offered by Apple sports a 180MHz processor, 16MB of RAM, a 1.3GB hard drive, and a removable floppy drive for \$4,500, a price comparable to what you'd pay for a similarly equipped PC portable. The three other configurations are more expensive and differ in processor speed, hard drive size, and CD-ROM drive speed. All of these higher configurations come loaded with 16MB of RAM, an exchangeable floppy drive, and a 33.6Kbps modem and 10Mbps Ethernet on a PCI card. The 3400c/180 comes with a 180MHz processor, a 1.3GB hard drive, and a \$5,000 price tag, while the 3400c/200 races out of Apple with a 200MHz processor, a 2GB hard drive, and an equally hefty price of \$5,500. But that's not even the big news. By the end of March, Apple is expected to unleash its lightning-fast 240MHz machine strapped with a 3GB hard drive and a 12X CD-ROM, all for a mere \$6,500. Wow, looks like it's time to break out the trust fund.

But the PowerBook 3400 was never meant for the common man—that's why Apple created the PowerBook 1400. Discerning users of the PowerBook 3400 must exhibit an uncontrollable urge for videoconferencing, a strong desire to create complicated projects using RAM-munching applications, a penchant for fast-paced graphics, and a big, fat wallet to match. Sporting a 603e chip and clocking in at processor speeds heretofore unknown to Apple laptops—up to 240MHz—the PowerBook 3400 brings a bundle of it's-about-time updates to the PowerBook line. Unlike previous models, the 3400 is based on the PCI bus architecture, which helps it shuttle data among various system components faster than ever before. And, unlike the PowerBook 1400, all configurations of the PowerBook 3400 also include a 256K Level 2 cache, a powerful lithium ion battery, improved sound, faster graphics, and room for more memory than most people can afford. But that's not all that's new....

Design of the Times

Just as you wouldn't see the CEO of a *Fortune* 500 company strolling into a board meeting with a tiger-striped Trapper Keeper, you won't find the elegant PowerBook 3400 sporting the clear plastic bookcovers that were so popular for the PowerBook 1400. With the firm belief that you *can* judge a book by its cover, Apple opted for a more chiseled, macho case cover and a streamlined design that's classy enough to suit any conservative office dress code.

Classy, but by no means convenient. Unlike the PowerBook 1400, which lets you simply pop off its

speaker grill and fold out the keyboard to reach the hard drive, the PowerBook 3400 requires an 8-bit Torx screwdriver and a little extra wrangling to make it to the inside. The first trick is actually finding a Torx screwdriver, which isn't common, even in computer stores, but is supplied by some RAM vendors when you buy memory. Once you've got your miniscule tool, you'll need to unscrew the three screws on the back of the machine, turn over your laptop, and take off the keyboard to get to your RAM—hardly an award-winning bit of industrial design. Fortunately, other features make up for the awkward case.

Carrying Its Weight

Tipping the scales at a minimum of 6.9 pounds and a maximum of 7.4 pounds with the CD-ROM drive installed, the PowerBook 3400 may seem overweight in a rapidly thinning world of anorexic laptops. But reduce this chunky 11.5-x-9.4-x-2.4-inch machine to the sum of its

parts, and you'll quickly see why Apple's latest laptop carries some serious weight.

Speed

Sporting the fastest processor of any laptop on the market today, the speedy PowerBook 3400 leaves its PC competitors choking on its dust. Taking advantage of the 603e chip's ability to handle higher speeds than 200MHz without overheating, Apple has fitted its turbocharged, top configuration with a 240MHz processor, thereby making its little laptop faster than many desk-bound models. Boosted by a 256K Level 2 cache that never made it into the strict confines of the PowerBook 1400, the PowerBook 3400 is fast, fast, fast. However, if you're planning on buying low and adding speed later, you'll have to haul out the cash for a totally new machine, because the PowerBook 3400's processor sits on the motherboard, not on the daughtercard as in the PowerBook 1400.

For Starters

Here's a brief look at the four configurations that make up Apple's PowerBook 3400 lineup, the latest in the way of high-end laptops. Circle the one you want, send it to your accountant, and tell him to make it happen.

3400c/240—\$6,500

240MHz 603e, 16MB of RAM, 3GB hard drive, floppy and 12X CD-ROM drives, built-in Ethernet and 33.6 Kbps modem

3400c/200—\$5,500

200MHz 603e, 16MB of RAM, 2GB hard drive, floppy and 6X CD-ROM drives, built-in Ethernet and 33.6Kbps modem

3400c/180—\$5,000

180MHz 603e, 16MB of RAM, 1.3GB hard drive, floppy and 6X CD-ROM drives, built-in Ethernet and 33.6Kbps modem

3400c/180—\$4,500

180MHz 603e, 16MB of RAM, 1.3GB hard drive, floppy drive

Storage space

Although Apple has been bashed in the past for not offering CD-ROM drives in its portable computers, the company finally made up for its mistake with the PowerBook 1400 and continues to offer swappable options with the PowerBook 3400 via an expansion bay that accepts both 3½- and 5¼-inch modules. Pop a 1.4MB floppy drive into the expansion bay (which is on the right side of the laptop, not on the front as with the 1400) or swap in a CD-ROM drive, a second hard drive, a magneto-optical drive, a Zip drive, or an internal AC adapter. Zip drives, though not available at press time, are expected on shelves by May 1997. Having only one expansion bay means that you can use only one of these options at a time, but they're all hot-swappable, which means that you don't even have to put your machine to sleep to

switch them around (a convenience so far unavailable in PC portables).

Unfortunately, due to the differing shell designs of the PowerBook 1400 and the PowerBook 3400, their expansion bay devices are not interchangeable. The silver lining? The PowerBook 3400 is compatible with hardware designed for the expansion bays in the 5300 and 190 models.

Add-in cards

In addition to expansion options, the PowerBook 3400 offers expanded functionality through two PC Card slots, found on the machine's left side. Stacked one on top of the other, the PC Card slots can hold either two Type II cards or one Type III card, which can be used to add a modem or Ethernet connectivity.

An internal PCI slot, which is taken up by an Asanté Ethernet/modem card in the three higher configurations of the PowerBook 3400 is left open in the base configuration. Although the only card that currently fits this proprietary-size slot is the Asanté Ethernet/modem card, possible cards you might expect to see on the market could allow for such extras as faster Ethernet and 24-bit video out.

RAM, RAM, RAM

Apple finally caved in to consumer demand by supplying the PowerBook 3400 with 16MB of built-in RAM, enough to actually meet the demands of most applications. When Apple introduced the PowerBook 1400 with a mere 12MB of RAM, Mac users jumped up and cried foul play with the complaint that you can't realistically run most RAM-intensive applications—and even a lot of CD-ROM-based games—with such a scant amount of memory. Apple got the hint, included 16MB with the PowerBook 3400 series, and even one-upped the entire laptop industry by allowing you to expand the memory to 144MB.

The bad news? There's only one RAM slot to add this memory—and that slot does not accept memory from other PowerBooks, nor is it easy to access. Massive-capacity RAM cards are available from such vendors as Newer Technology (800-678-3726, <<http://www.newerram.com>>), Southland Micro Systems (800-255-4200, <<http://www.southlandmicro.com>>), and LifeTime (800-233-6233). But any RAM card bigger than 48MB will cost significantly more per megabyte than cards with lower capacities. For example, a 128MB card (the highest-capacity card you're likely to find) will cost about \$1,600.

Bigger screen

Glue your eyes to the PowerBook 3400's vast 12.1-inch, active-matrix SVGA screen for thousands of colors (16 bits) worth of visual satisfaction. Although the screen is brighter than the dual-scan display in most configurations of the PowerBook 1400, Apple supplies you with

only 1MB of VRAM on the motherboard and doesn't let you add any extra. What you have allows for a resolution of 800 x 600 at 16 bits on your PowerBook screen and a maximum resolution of 1,024 x 768 at 8 bits (256 colors) when hooked up to an external monitor.

Faster graphics display

Not only do graphics look better on the PowerBook 3400, but they're much faster on the draw. The PowerBook 3400 sports a new video controller (designed by Chips & Technologies) that moves video data from the processor to the screen much faster than did previous controllers. The new video controller combined with the faster PCI architecture allows functions such as scrolls, line draws, and fills to run much faster.

Software MPEG decompression

Although there currently aren't many videos that are recorded using the MPEG format, Apple looks forward to more becoming available in the foreseeable future. To prepare, the company is including an extension that can decompress MPEG video. Without this extension, you would need to add an MPEG decompression board to your PowerBook in order to see MPEG videos. Granted, Apple's MPEG decompression extension won't run MPEG videos nearly as quickly or smoothly as would a hardware solution, but at least Apple has provided a convenient, built-in solution.

Sounds good

The PowerBook 3400 doesn't just look better and run graphics faster. With the addition of two speakers and two subwoofers, it doesn't sound tinny when you crank up the tunes. The PowerBook 1400 offers only one scrawny speaker above the keyboard, so for decent sound you must hook up external speakers to the stereo-out port. Although the PowerBook 3400 also comes with 16-bit stereo-in and -out ports on the left side of the machine, you don't need to rely on them for high-volume, quality audio. An integrated microphone, under the Apple logo at the bottom of the monitor on the PowerBook 3400, allows for speech recognition and sound recording.

Video capabilities

The PowerBook 3400 is "zoomed video" ready—the zoomed-video technology imports video via a PC card to the video controller, which then writes it directly to your Mac's screen. By bypassing the Mac's CPU, video can be displayed at a full-motion rate of 30 frames per second (fps)—no nasty lags or choppy pictures. As of mid-January, there weren't any PC cards on the market that actually let you do this. Apple, however, is talking with third parties about releasing some of these cards into the market. As it stands, zoomed video is a technology before its time; a cool little feature that Apple doesn't know quite what to do with...yet.

Price Check

PowerBook 3400

Model: 3400c/200
Processor: 200MHz
Hard drive: 2GB
Built-in RAM/max.: 16MB/144MB
Display: 12.1-inch, active-matrix SVGA
CD-ROM: 6X
Built-in Ethernet/modem: 33.6Kbps
Weight: 6.9 to 7.4 pounds
Price: \$5,500



IBM ThinkPad

Model: 760 ED
Processor: 150MHz Pentium
Hard drive: 2.1GB
Built-in RAM/max.: 16MB/104MB
Display: 12.1-inch XGA
CD-ROM: 6X
Fax/modem: 28.8Kbps, also serves as answering machine and speakerphone
Weight: 6.4 to 7.5 pounds
Price: \$5,999



Toshiba Tecra 730

Model: 730CDT
Processor: 150MHz Pentium
Hard drive: 2GB
Built-in RAM: 16MB
Display: 12.1-inch Super VGA
CD-ROM: 6X
Fax/modem: Built-in 28.8Kbps/14.4Kbps
Weight: 8.2 pounds
Price: \$5,899



Connectivity

Although the priority feature of any laptop is portability, many people use a PowerBook as their sole computer in the office as well as on the go. Apple tried to make the PowerBook 3400 as environment independent as possible by fitting all but the base model with built-in 10Mbps Ethernet and a 33.6Kbps modem.

Sure, PC users have had this capability for a while, but you have to give Apple credit for rising to the challenge and upping the ante by putting in a faster modem than you'll find in most PC laptops.

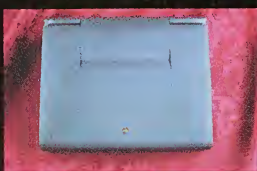
Apple also makes it easy to switch between Ethernet and modem hookups by letting you connect to them via an RJ-45 port on the back

of the PowerBook 3400. The port is useful because it accepts both Ethernet and modem plugs, despite their differing sizes, thereby freeing up valuable space on the back of the machine. The computer is also intuitive enough to figure out which method of connection you want to use, without you having to say a word.

3400



- 12.1-inch, 16-bit, active-matrix color display is just so huge.
- Sound controls are upfront and convenient.
- Integrated microphone lets you record your voice.
- Contrast and brightness controls are right where you'd expect them to be.
- Trackpad is tap, double-tap, and drag capable.
- Lithium battery inserts on the side and lasts about 2 to 3.5 hours.

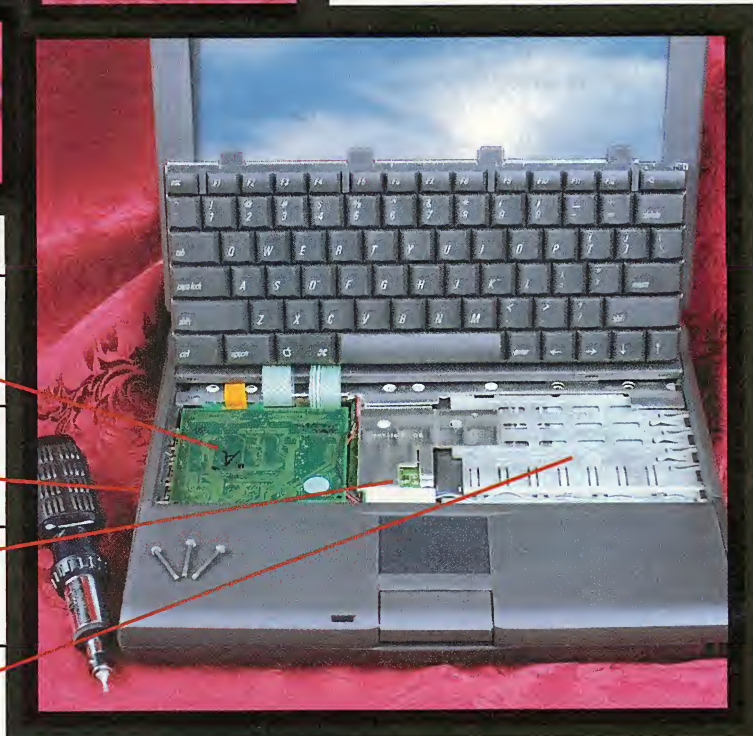


- Sleek case says you're a well-paid professional. Besides, BookCovers are so-o-o last season.

- RJ-45 port lets you plug in either Ethernet or modem cables, even though the two plugs are different sizes. The computer is smart enough to know which is which. This is nifty.



- The 16MB of built-in RAM is expandable to 144MB via this one RAM slot, which you can reach only by unscrewing the back of the PowerBook and then flipping it over to fold back the keyboard.
- Double-decker PC Card slots on the left side of the machine accept two Type II cards or one Type III card for adding modems or Ethernet.
- All models offer this PCI slot, but only the three highest configurations come with the Asanté Ethernet/modem card preinstalled.
- Expansion bay accepts a 1.4MB floppy drive, 6X or 12X CD-ROM drive, additional hard drive, magneto-optical drive, Zip drive, or internal AC adapter.



Software

The software that Apple bundles with the PowerBook 3400 is more than just glorified shovelware designed to take your mind off the product's hard-to-swallow price. Apple bumps up the value of each configuration by installing System 7.6 on the hard drive and including software such as the Apple Internet Connection Kit, Apple Remote Access, MacLink Plus, Claris Organizer, ForeFront's WebWhacker, Virtual Pool, and a nifty little program called Apple Location Manager. A true timesaver for people who continually drag their Powerbook from work to home at night, Apple Location Manager stores preferences for file sharing, networking, sound, time zone, printers, and more, and easily switches them back and forth between working environments.

Calling It Even, Steven

When Apple released the PowerBook 1400 late last year, the beleaguered company was losing a breathless match of catch-up. Once the leader in laptop sales, Apple had completely dropped the ball on the PowerBook after recalling the PowerBook 5300, only to find itself with a backlog of orders that it never could fill. Left with no new and exciting laptop alternatives, diehard Mac fans were forced to look toward PC portables that came with features, such as the removable CD-ROM drive, unavailable in any PowerBook at the time. With the release of the PowerBook 1400, Apple finally offered Mac fans a laptop capable of rivaling low-end PC competitors in price and performance. Unfortunately, Apple still lacked a high-end alternative... until now.

At first gasp, \$6,500 may seem steep for a PowerBook, even the high-end 3400. However, take the time to flip through a few PC catalogs and you'll be surprised to note that the Toshiba Tecras and IBM ThinkPads sporting similar configurations cost just as much as Apple's high-priced PowerBook, if not more. So, while five to six grand still seems steep for the average Joe and Mindy on the street, when compared with its competitors, the PowerBook 3400 seems almost reasonably priced. Almost.

The PowerBook 3400 doesn't break new ground in industrial design or fancy features, but it evens the score with the competition. Not only does it match PC portables in graphics capabilities, swappable expansion bay devices, sound, and expandability, but it outright beats them in processor speed and price. Now that Apple has leveled the playing field, the company can begin innovating its laptop line instead of merely resuscitating it. ■

Associate editor Nikk Echler hopes to be able to afford a PowerBook 3400 by the year 3400.

Torqued Off

If you've ever felt paranoid that Apple really doesn't want you lurking around the deep, dark depths of your PowerBook, you may be right. In order to access the insides of the PowerBook



3400, you need to loosen three long screws at the bottom of the case with an 8-bit Torx screwdriver before you can pop off the

keyboard and get inside. Sounds simple enough, until you realize that you don't have an 8-bit Torx screwdriver. Where do you get one? A computer superstore? A hardware store? God?

Some friendly RAM vendors supply tools with your purchase; others aren't so nice. If you don't get an 8-bit Torx screwdriver from your RAM supplier, or if you're just dying to get into your PowerBook's innards, you can most likely look forward to a shopping expedition like this one.

Follow along with three *MacAddict* shoppers as our "Trek for the Torx" takes us from the gritty

and outskirts of San Francisco to the tender heart of Silicon Valley.

1. Our unwitting adventure begins at South San Francisco's only computer superstore, CompUSA, where a condescending clerk tells us that the 55-piece toolkit on display (the only one with an 8-bit Torx) is for display purposes only. If it's not on the shelves, we don't have it, he says. The beefy salesman suggests we go to a Mac-only store, such as ComputerWare in San Mateo (a 15-minute drive), where we'd be more likely to find the tools we need.

2. Kathy uses the phone in front of CompUSA to verify that ComputerWare has an 8-bit Torx, but the line is busy, so we head over to the Sears across the street, hoping that the automotive department will have what we need and save us a little time.

3. We make the short drive to Sears and scour the shelves, only to find that the smallest Torx screwdriver it sells is 10-bit. Too big. On the way back to the phones, we lose David and are forced to flee the lingerie department under the disapproving stare of a suspicious salesclerk. She thinks we're up to something. She's right.

4. Kathy once again dials ComputerWare, only to find that it doesn't carry 8-bit Torx screwdrivers because it doesn't want to be held responsible for folks who sabotage their own PowerBooks using a tool sold at ComputerWare. The salesperson recommends CompUSA. Kathy sobs our story to the kindly Mac clerk, who then advises us to check out Radio Shack, which just so happens to be in the mall connected to

Sears. We have to head back through the panty aisle while the disgusted salesclerk glares at us and protectively hovers over the mannequins.

5. We crowd into an already crowded Radio Shack and try to describe a Torx screwdriver to the clueless clerk. She leads us to a dark corner back by the *How To Learn Morse Code* videotapes, where the smallest Torx screwdriver we can find is, of course, 10-bit.

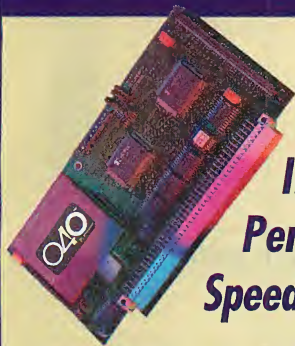
6. We plod back to the phones and call ACE Hardware. The sales associate leaves me on the line while he checks to see if ACE has a screwdriver that small in stock. We all take up uncomfortable poses in the little aquarium-like glass space separating the outside and inside doors to Sears. Dave begins to pace. What feels like hours later, the sales dude gets back on the phone, apparently discouraged, "8-bit, that's pretty small, isn't it? Hmm."

7. As a last resort, we shell out the extra coins needed to call Fry's Electronics, a computer superstore way down in Palo Alto. Fry's claims to have the 8-bit screwdriver, so we make the 30-minute drive down the peninsula and cross our fingers. A clerk at the store sends us up aisle 10 (for tools, get it?), and we finally find the stupid screwdriver. After only three hours of calling, searching, driving, and calling we hold a bitter victory celebration in front of Fry's tacky cactus signpost with our toolkit and a bunch of junk we bought while waiting in Fry's long checkout lines.

Will people in such states as Ohio, Nebraska, and Florida have as much fun as we did tracking down the elusive 8-bit screwdriver necessary for prying apart the PowerBook 3400? We'll bet that they'll have even *more* fun. —NE



Run Your Mac Faster and Save!



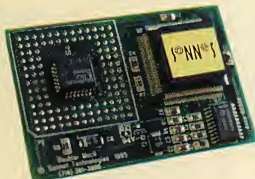
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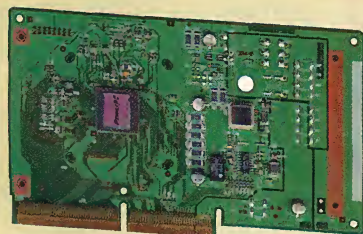
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All Prestos are 100% application software compatible and run through System 7.5.5*. The Prestos are easy to install in the Macs' processor direct slot, and come with clear installation instructions. (*Some configurations are not compatible with RAMDoubler or Virtual Memory. Adapter req'd IIsi)

Allegro's Fast 68030s Give New Life to Mac SE, II, IIfx, LC, LC II, Color Classic from \$99



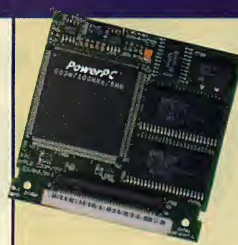
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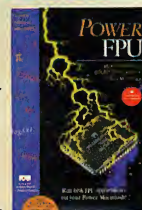


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This Old Mac: Mac II

By T. Kelley Boylan



FIND THE
SHAREWARE
mentioned
on The Disc.

Onward and upward! In the first part of our series on upgrading older Macs (Feb/97, p62), we discussed the Mac Plus. Then in March (p58) it was the SE/30, and now, this month, we present the Mac II, the first color Mac. Despite having a processor—the 68020—that is a generation older than the one in the SE/30, the Mac II will run almost anything, albeit more slowly than today's PowerPC-equipped Macs.

A Mac II is fast enough for word processing and Internet access, and it is an excellent starter machine. If you want to do data acquisition, the six NuBus slots truly are a bonanza. The Mac II also is a bargain; a used one with 4MB of RAM and a 40MB hard drive costs only about \$130.



Hot Tip:

Apple keeps up with its own old hardware. For specs on every Mac ever made (but not being made anymore), go to <http://product.info.apple.com/productinfo/datasheets/dt/dtarchive.html>.

What You Have To Work With



Up to 128MB of RAM, with considerable caveats.

A choice of displays, from 1-bit through 24-bit, any size, depending on the card.

(The Mac II shipped with an 8-bit card capable of displaying a resolution of 640 x 480—a perfect fit with a 13-inch monitor.)

A 68020 processor with a 68881 floating-point unit (FPU). You can get an optional 68851 paged-

memory management unit (PMMU). **Six, yup, six, NuBus slots** for expansion.

Plenty of room for internal drives (and, of course, the Mac's standard SCSI port for adding external devices).

What To Do About Hardware



CPU: At 2.6 MIPS (million instructions per second), a Mac II's 68020 processor

isn't particularly fast. It's faster than the Plus (at 0.7 MIPS) but not as fast as the SE/30 (3.9 MIPS). The II's '020 does have an FPU, though, which lets it run software, such as some 3D programs, that the Plus and SE flat out can't handle.

Optionally, you can add a 68851 PMMU to the II's motherboard. With it, you can use virtual memory and some memory utilities such as Connectix's RAM Doubler. No PMMU, no virtual memory. PMMUs are available through used-hardware vendors and are worth the cost if you're really going to use the machine. Apple dealers sometimes carry them, too, so ask at your local outlet.

Memory: The Mac II, like the SE/30 and IIsi, needs Mode32 to see more than 8MB of RAM. If you install more than 8MB of RAM in a Mac II, you'll find that your System software suddenly takes up the rest of the memory. Find out by checking About This Macintosh or its System 6 equivalent, About the Finder, in the Apple menu. It will say that the system is using 10MB or 15MB instead of 3MB to 5MB. The system is simply unable to address the additional RAM properly.

To resolve this issue, you need either Connectix's Mode32 control panel (version 7.5) or Apple's 32-bit Enabler extension. Mode32 is on The Disc and is easy to find on the Internet free of charge at <ftp://sumex-aim.stanford.edu/info-mac/cfg/mode32-75.hqx>. Apple's 32-bit Enabler is also on The Disc and at <ftp://mirror.apple.com/mirrors/Apple_SW_Updates/US/Macintosh/System/Other_System/32-Bit_System_Enabler_1.0.3.sea.hqx>.

WARNING: Mode32 version 1.2 and System 7.5 don't get along. Using them together may corrupt data, so if you're using System 7.5 or later, be sure to use Mode32 version 7.5.

Because there was no such thing as a 4MB SIMM when the Mac II was designed, Apple had to guess on memory details. They were close.

But only close. If you want to max out your RAM, you'll need 30-pin SIMMs that include a PAL chip. Alternatively, MicroMac makes a converter that will handle any 30-pin SIMM. Non-PAL chips larger than 4MB won't work without a converter. (PAL chips are few and far between, anyhow.)

On a Mac II, there are eight slots total for adding memory. SIMMs must be installed four at a time, and each SIMM in a group must be the same size. As with all Macs of this era, the Mac II's SIMM slots are divided into two banks: A and B. Bank A is closest to the CPU, and, because of a bug, it won't—without additional modification—address SIMMs larger than 1MB. Thus, you can put only 4MB total in Bank A. Bank B will hold up to 64MB, as it should. If it weren't for the bug that plagues Bank A, you would be able to install a total of 128MB of RAM in a Mac II. Unfortunately, you can install a total of only 68MB of RAM.

If you really need more RAM, upgrade the floppy drive. Believe it or not, the floppy upgrade (described below) fixes the memory bug. Post upgrade, Bank A can see SIMMs up to 16MB, and you can use up to the full 128MB.

Storage: A Mac II includes two 800K model floppy drives—not the more-versatile 1.44MB SuperDrive. Besides holding more data, a SuperDrive can read PC disks. You can't just drop a new floppy drive in, though.

To upgrade to a SuperDrive, ask your favorite vendor for a IIX ROM (Revision B), a 1.44MB floppy drive, and installation instructions. Prices vary, but if it's more than \$200, stick with the 800K floppy drives. Unless you absolutely must have the SuperDrive or more than 68MB of RAM, you're better off saving for a new machine.

If you want a larger internal hard drive, you can add one up to 4GB in capacity. System 7.5.5 will address up to 4GB of hard disk space. Theoretically, System 7.5.5 can address up to two terabytes of hard disk space, but, according to Apple, the drivers put a cap on that.

You also can plug hard drives into the external SCSI port just as you can on a modern Mac. And because the Mac II wasn't designed with an accessible storage bay, you'll need to add removable media drives to the SCSI port. Want a CD player or a magneto-optical drive? Plug it in. At most, you'll need a third-party driver, available from companies such as FWB Software (415-463-3500, <http://www.fwb.com>) or CharisMac Engineering (916-885-4420, <http://www.charismac.com>).

Video: As the first color Mac, the II shook the earth when it hit the streets. And its video isn't part of the motherboard. Heresy! It's on a separate card called the Toby. Old Toby cards still abound, and although they display only 8-bit color, they drop into any modern Mac's NuBus slot (as long as it's a 12-inch NuBus instead of the shorter, 7-inch slot, that is).

An oddity in the hardware on a Toby card lets it display more than the usual 640-x-480 resolution. Most monitors have a black band around the edge, a border unused by the CRT. Shareware such as MaxAppleZoom and Monitor Expander let a Toby card use that black band—they literally paint in more pixels. Sure, you could open the monitor and twist a screw or two (if you know what you're doing) to stretch the image and fill the screen. But you still have only 640 pixels across and 480 pixels down. MaxAppleZoom and Monitor Expander push the display area up to 1,952 x 2,048. It's more useful to set it to 704 x 512 and thus fill the empty space around the edge.

If 8-bit color doesn't cut it, the Mac II supports any NuBus video card, up to 24-bit color and in a variety of resolutions. Call any hardware vendor and buy what you need. Remember, this is an old machine. The more colors you use, the slower they'll display. Also, 24-bit boards aren't cheap and may cost upwards of \$500—more than your Mac II is worth.

Modem: Save your money; don't by a 33.6Kbps modem. Or a 28.8Kbps modem. Or a 14.4Kbps

Used Hardware Sources

Contact several vendors when you shop, and ask about warranties and return policies, just in case. This list isn't comprehensive, but it's a good place to start.

The Computer Exchange
800-304-4639
<http://www.compexch.com>

CRA Systems
800-375-9000
<http://www.cra-sys.com>

DataTech Remarketing
800-281-3661
<http://www.datatech-rmkt.com>

GE Capital Electronics Services
800-431-7716
<http://www.ge.com/capital/commequip/es>

Hawke Business Systems
800-875-2610
machawke@aol.com

Mac • Res • Q
510-689-9488
<http://www.macresq.com>

Mac Sale International
800-729-7031
<http://gn2.getnet.com/macsale/index.html>

Pre-Owned Electronics
800-274-5343

Sun Remarketing
800-821-3221
<http://www.sunrem.com>

More Sources for Old Macs...

old mac

- Use your favorite search engine to search for "used mac"
- Subscribe to the news-group <comp.sys.mac.forsale>
- Look in local news-groups; for example, <yourcity.forsale>
- Peruse the phone book under "Computers, Used"
- Watch the newspaper's "for sale" section
- Ask around. You may be surprised by how many people have old computers stashed in the closet that they'll just give away.

Hardware Sources

Accelerators

Brainstorm Networks
415-988-2900
<http://www.brainstorm.net>

DayStar Digital
770-967-2077
<http://www.daystar.com>

MicroMac Technology
800-600-6227
<http://www.micromac.com>

MacGalaxy
608-238-0606
<http://www.macgalaxy.com/pages/store/hardware/boards.html>

Sonnet Technologies
800-786-6260
<http://www.sonnettech.com>

Video

RasterOps
800-729-2656
<http://www.rasterops.com>

Radius
800-277-2795
<http://www.radius.com>

Networking

Farallon Communications
800-759-7761
<http://www.farallon.com>



THE MAC II WAS THE FIRST MAC that you could easily open and add components to, thus the nickname "Open Mac." Shown is the license plate that Jean-Louis Gassée, former head of product development at Apple, sported when the Mac II shipped.

modem. The Mac II's serial port's top speed is only 9,600 baud, just like the Plus. If all you have is a fast modem and it won't work, be sure you've set your software to no more than 9,600 baud.

Networking: The Mac II has AppleTalk built in, but you can add Ethernet, Token Ring, or any other protocol via a NuBus card. Unfortunately, your network access tops out at 9,600 baud because of the aforementioned serial port speed limit.

Slots: In the slot department, the Mac II shines. Only three Macs ever shipped with six slots, so if you need a lot of cards, welcome to hog heaven. What might you want to add? Accelerators, networking cards, data acquisition cards, display cards, or video capture cards.

You can build a video wall with six video cards and six monitors. Or you can run a kiosk that faces six different directions. Or you can pick up data from half a dozen sensors. Just go wild.

Accelerators: There's no shortage of accelerators for the Mac II. They range from products with a 68030 chip to those with a PowerPC chip. Is it worth the upgrade? Possibly.

Scientific uses often require cards to acquire data, and none of the currently shipping models have six NuBus slots. Be aware, though, that upgrading your Mac II with a PowerPC-based accelerator won't make it as fast as today's Power Macs. That's because the rest of the Mac II's internal architecture won't have been updated. So although

you'll see definite speed improvements with a PowerPC-based accelerator, you won't see enough to be happy editing, say, complex, layered images in Adobe Photoshop or running top-end games such as Bungie's Marathon.

Look for accelerators on sale. Call used-hardware vendors to find bargains, and try to keep the cost under \$350. If it's looking like more than that, you might as well save your money for a new or refurbished machine.

Ask about conflicts, too. Most vendors claim that their boards are 100 percent compatible, but watch that pesky fine print. For example, Sonnet Technologies' Allegro II requires an original Apple Memory Unit, and it isn't compatible with the 68851 PMMU upgrade.

What To Do About Software



Application software:

A Mac II is almost a modern Mac. Almost. There

are a few applications that don't like processors older than the '030—for example, Netscape Navigator and America Online version 3.0. As for productivity programs, such as Microsoft Office and Adobe Photoshop, all's well. They won't run fast on a II, but they'll work.

System software: With a Mac II, you can take your pick from several versions of System software. System 7.5.2 is not universal, so stay away from it. And System 7.6, Apple's latest incarnation, won't run on Macs that aren't 32-bit clean and don't have at least a 68030 processor—and that includes the Mac II. Your best bet? Run System 7.5.5. It's the latest version of System software that will run on a Mac II.

Games: Most twitch games of late need at least an '040. Slower

games, such as Semicolon Software's Solitaire or Presage's Lode Runner, work fine, so look to old-game archives such as <<ftp://ftp.funet.fi/pub/mac/games>>. Also, check <<http://www.astro.nwu.edu/lentz/mac/recreation/classic-mac-games.html>>. They specialize in toys for elderly machines. ■

T. Kelley Boylan has co-authored several books and articles and is a Mac administrator when he's not writing. He owns and uses Macs exclusively.

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Radius PressView 21sr	from \$2899*
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Radius PrecisionColor Display 21	\$1499*
RasterOps SuperScan MC 21	\$CALL
Radius Multiview 21	\$CALL
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20" SONY Trinitron Technology

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Radius PrecisionColor 20v	\$1099*
Digital 20 inch Display Up to 1280x1024	\$1399
RasterOps 20 Multimode	\$1299
Radius PrecisionColor 19	\$899*

Radius IntelliColor Display 20

\$1499*

- MacUser, MacWorld, MacWeek Editor's Choice
- 1600x1200 to 640x480

Apple Multiple Scan 20 Display

\$CALL

SuperMac Trinitron

from **\$1099**

Radius 20 inch Grayscale Display

\$699

*With qualifying videocard, accelerator, or computer purchase

SEVENTEEN INCH DISPLAYS

SuperMac/E-Machines T1611MR **\$599***

- Studio Grade Trinitron CRT
- 0.26 Dot Pitch



Swivel base sold separately

SuperMatch 17T TRINITRON	\$699
PrecisionColor Display 17	from \$899
PrecisionView 17	\$CALL
Radius PressView 17sr	\$CALL
SuperMac SuperMatch 17	from \$499*

*With qualifying videocard, accelerator, or computer purchase

PORTRAIT DISPLAYS

Radius Pivot Display

\$199*

We have cards for SE/30, LC, IIsi Nubus, and Quadras

* With purchase of video card.

PrecisionColor Pivot	\$599
Color Pivot LE	\$399
Radius Full Page Display	\$299
Apple Portrait Display	\$399
Portrait Display Labs 1700	\$CALL
E-machines ColorPage 15 with NUBUS card	\$499

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- 1600 x 1200 to 640 x 480 resolutions
- MPEG video playback
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Radius Thunder II & IV GX Cards

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Radius Thunder 3D	\$CALL
Radius ThunderColor 30/1152 & 1600	\$CALL
Radius ThunderPower 30/1920	\$CALL
Radius PrecisionColor 8/1600	\$399

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Radius 24-bit cards	from \$399
Radius PrecisionColor 24X	\$599
Thunder 8 "Fastest 8 bit card ever"	\$CALL
Thunder 24 & Thunder 24/GT*	from \$499
Radius LeMans GT	\$799
SuperMac Ultima LX*	\$799
RasterOps Horizon 24*	\$899
RasterOps Prism GT	\$CALL
Radius PrecisionColor 8XJ	\$499

*DSP Available

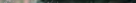
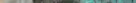
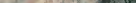
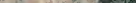
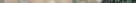
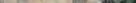
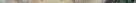
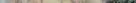
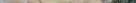
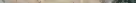
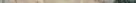
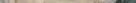
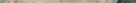
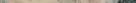
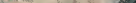
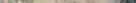
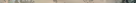
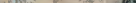
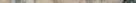
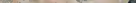
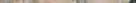
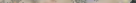
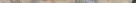
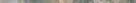
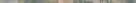
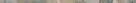
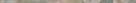
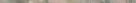
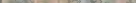
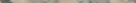
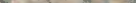
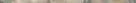
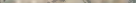
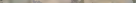
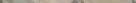
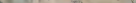
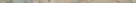
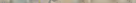
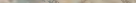
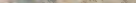
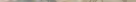
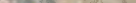
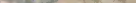
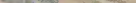
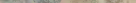
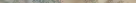
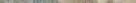
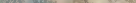
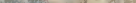
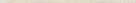
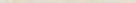
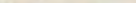
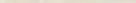
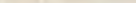
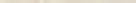
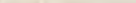
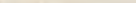
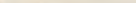
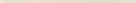
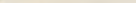
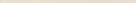
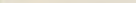
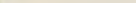
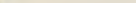
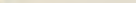
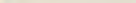
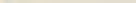
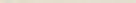
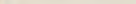
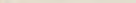
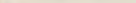
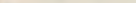
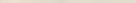
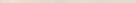
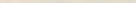
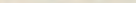
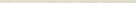
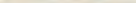
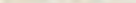
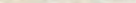
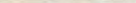
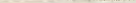
20/19" RESOLUTIONS

Radius 24-bit cards	from \$289
SuperMac Spectrum 24 Series V	\$599
Radius PrecisionColor Pro 24XK	\$CALL
SuperMac Futura MX	\$299
RasterOps PaintBoard Lightning	\$CALL
SuperMac Spectrum 8	\$189
PowerView/SuperView for Powerbooks	\$199/\$299

17/16" RESOLUTIONS

Radius 24-bit video cards	from \$189
Radius PrecisionColor Pro 24XP	\$CALL
SuperMac Futura SX	\$299
RasterOps 24 MX	\$399

HARD TO FIND NUBUS CARDS IN STOCK!





reviews

Adobe doo be doo—slingin' HTML, swingin' 3D, and some hep games, daddy-o.

PageMaker 6.5

DEVELOPER: Adobe

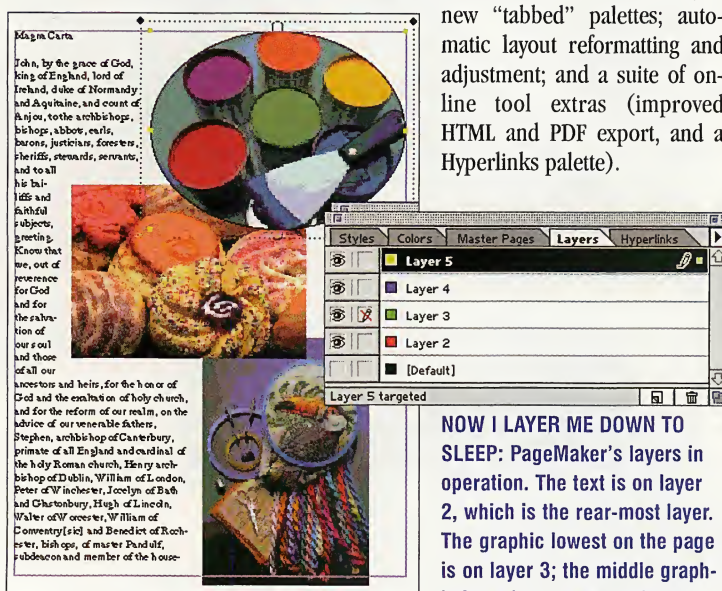
CONTACT: 800-42-ADOBE; <http://www.adobe.com>

PRICE: \$895 (SRP), upgrades \$99

REQUIREMENTS: 68030 processor (PowerPC recommended); System 7.1 (7.5.5 recommended); CD-ROM drive; 6MB of RAM available to PageMaker (9MB on Power Macintosh); 26MB of hard disk space for minimum installation (56MB for full installation)

PageMaker has long had the capabilities of—just to list a few major features—automatically creating indexes and tables of contents; creating a “Book” out of a set of related documents (the Book can be indexed, table-of-contentsed, auto-page-renumbered, and printed all together); paragraph styles for text; styles for different printers and print-job setup requirements; multiple master pages; a Control palette for easy manipulation of almost any PageMaker element or text attribute; the best color separation capabilities in the field; self-contained trapping; and using an internal scripting engine to automate tasks. Version 6.5 adds layers; vastly improved internal scripting; improvements in text tagging; text and graphics frames, much like those in QuarkXPress (this was XPress’ single biggest feature advantage); an enhanced polygon tool; a vastly improved Adobe Table application; an enhanced Grid Manager;

new “tabbed” palettes; automatic layout reformatting and adjustment; and a suite of on-line tool extras (improved HTML and PDF export, and a Hyperlinks palette).



graphic, which is in an oval graphic frame, is on layer 5, which is also the currently targeted layer. The Default layer is invisible; layer 3 is write-protected.

The new Layers work much like they do in Photoshop and Illustrator: you can put elements on separate layers; change the order of layers; make individual layers write-protected and/or non-printing. This makes the design process far more flexible and forgiving, as Photoshoppers know. Also, you could (though this might be more trouble than it's worth) build and group layers according to CMYK colors, and print color separations that way. Layers can also be handy for easily making multiple versions of the same basic document; just make the appropriate layer visible, while the others are invisible (and the common “background” remains visible throughout).

PageMaker's scripting has graduated from a fairly capable language to an incredibly rich and full programming language. Scripting is a great way to automate repetitive tasks for speed, efficiency, and accuracy. The only weakness in PageMaker 6.5's scripting is that there's still not much of a link to external, system-wide scripting (e.g., AppleScript): only two commands are supported—“do script” and “evaluate”—and they can only call one internal scripting command at a time. It's possible to perform most tasks that way; it just feels a bit clunky. One gripe: you have to buy a \$45 book from Adobe Press in order to have all the scripting documentation you need; an on-line help file is included in the PageMaker package, but it doesn't begin to cover everything.

PageMaker's tagging language hasn't actually changed from version 6.0, but it now works without incident (it was quite buggy in 6.0). Tags are visible text- and paragraph-formatting codes that you insert into a text-only document; the tags cause PageMaker to format the text on import. This is more convenient than working with formatted word-processing files, because you can see what you're doing (for instance, confirming which style is applied to each paragraph), and you can perform search-and-replace operations on the tags in your word-processor. Furthermore, PageMaker now correctly reads XPress Tags files (it was an included but also unreliable feature of Version 6.0); this makes it possible to use certain XPress-oriented utilities to take a formatted Microsoft Word file, transform it to an XPress-Tagged text-only file, perform operations such as those mentioned above on the text file, and import it straight into PageMaker without any further alteration.

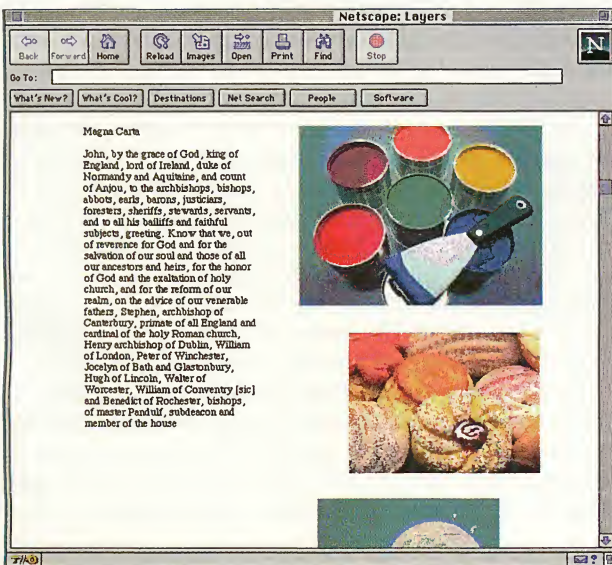
Those who have used both XPress and PageMaker are probably ready for the new Frames feature. In some ways, PageMaker's frames work the same as XPress': for instance, you can set up a custom text flow in advance (previously possible in PageMaker only by using dummy text); and you can apply a background and a border to a frame. In other ways, PageMaker's frames aren't up to XPress's yet: a frame can only hold one text column, and a frame can't be pasted into another frame. Still, you can mix-and-match PageMaker's traditional text blocks and freestanding graphics with text and graphic frames, and convert them back and forth willy-nilly.

Adobe Table is PageMaker's table-making tool. It's actually a separate utility that comes with PageMaker; you use it to create an EPS file that you import into PageMaker, and it has added color support this time around. It's a very good table-creation tool; its biggest remaining weakness is lack of support for multiple-page tables.

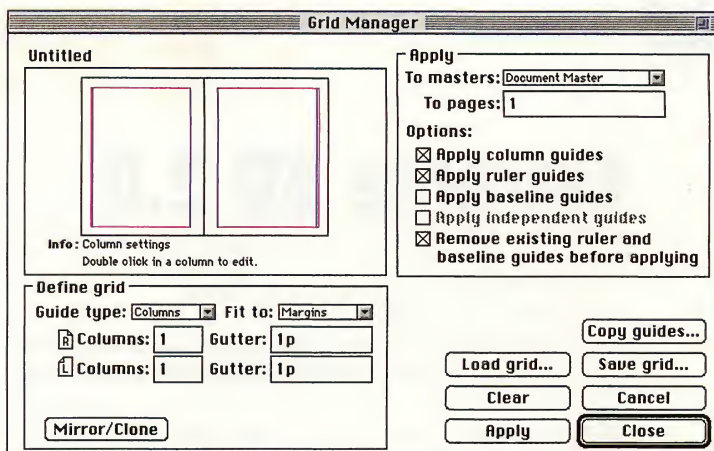
PageMaker's new tabbed palettes are straight out of Photoshop: you have multiple "pages" of palettes inside the same window (PageMaker comes set up with its palettes in pairs, but you can customize this), each palette being identified by what looks like the tab on an old-fashioned manila folder. To change from one palette to



THE SAME DOCUMENT (see p62 for original) exported to Acrobat PDF. Notice how the layout has been faithfully reproduced.



ALMOST THE SAME DOCUMENT exported to HTML. The overlaps, text wraps, and oval frame had to be removed before exporting, but that's due to HTML's limitations.



GET A GRID ON YOURSELF: PageMaker's grid manager can define and save sets of guides, and can create a grid within an area of a page.

another, just click on its tab. This is a great feature which I use to combine all five palettes possible into one window. This is a great on-screen space-saver, especially handy since some of the individual palettes (notably the Styles palette) have grown quite a bit, for no apparent reason; fitting five palettes into the space of one or two partially counteracts that undesired growth.

The layout adjustment feature is the kind of thing that will be a life-saver for some people, while others will never use it. When you move one object (a graphics box, say), the other elements on the page will reflow automatically. It gives you a great deal of control over what happens to your text and graphic elements if you resize or reshape your pages or even just reposition your margins. Be aware that this won't always work perfectly (nothing like this ever could, due to the infinity of scenarios it's trying to allow for), but it's a darn sight better than no layout adjustment.

HTML and PDF export and the Hyperlinks palette are of interest to those who publish documents electronically—now you can create a page with all the precise graphic tools of PageMaker, and have these designed pages (mostly) translated for the Web. Though these two export capabilities were there before, they're greatly improved in 6.5. The Hyperlinks palette is new, and works just fine (letting you create hyperlinks for either HTML or PDF); the main weakness is that you can't create a hyperlink from one PageMaker document to another.

Finally, there's the Adobe-wide Great Change of '97: major gratuitous alterations in the keyboard shortcuts. Someone at Adobe has evidently determined that PageMaker, Illustrator, and Photoshop should share the same set of shortcuts, which in itself is questionable, since they're different kinds of programs that do totally different things. But the worst part (from a desktop publisher's viewpoint) is that they decided that PageMaker was the one that should conform to the others. Some of the new shortcuts might only require some new memorization; but some of them will require totally different work habits, having gone from simple one-handed shortcuts to very awkward two-handed contortions.

Despite the learning curve, PageMaker 6.5 is a significant improvement to what was already a very impressive and powerful page-layout program. —Phil Gaskill



GOOD NEWS: Major new features definitely make this something for Quark to worry about.

BAD NEWS: New scripting language requires \$45 manual. Major interface changes might be difficult or counter-productive for many people.



reviews

Extreme 3D 2.0

DEVELOPER: Macromedia

CONTACT: 800-326-2128, <http://www.macromedia.com>

PRICE: \$399 (street), \$149 upgrade

REQUIREMENTS: Power Mac, 16MB of RAM, System 7.0 or later, QuickDraw 3D 1.06, QuickTime 2.5 (recommended: 604e-based Mac, 32MB or more of RAM)

Macromedia worked hard to inject some pizzazz into this version of Extreme 3D, and on the whole, the effort is a success. But you know what they say about the details, and Extreme 3D still has a few devilish shortcomings.

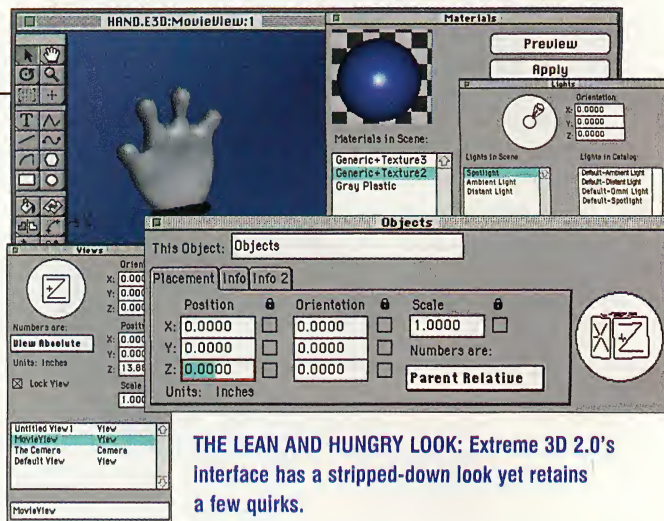
Let's look at the good stuff first. Extreme 3D's most impressive new features are the Metaforms and particle tools. Metaforms are based on the concept of metablobs (also called metaballs), a modeling method long present in high-end 3D programs. Most metablob modelers work by merging a group of spherical blobs based on a "sphere of attraction" around each object. You can build incredibly complex organic models by manipulating grouped strings of blobs, but you need a lot of trial and error, and patience.

Extreme 3D improves the metablob concept. Instead of melding spheres together, it melds profiles (Extreme 3D's term for splines) along a user-definable radius and degree of "blobbiness." One easy-to-manipulate profile can do the job of a whole string of individual blobs. Unfortunately, you can't vary the radius of a profile over its length, which means that sometimes you still get better results with the old method (which Extreme 3D also supports). Metaforms can be animated, but seamless-skinned models are still something Extreme 3D doesn't do well.

Extreme 3D doesn't support Boolean operations, but it does trim surfaces to give Boolean-like effects. Trimming involves creating a trim curve, which fits on the surface of the model and

creates a hole within its boundaries. The program creates trim curves at the intersection between two models for Boolean-like union, subtraction, and intersection effects. In some ways, trimming is superior to Boolean operations, because a trimmed surface retains all of its original data, whereas Boolean models usually don't. For instance, you can edit the cross-sections of a trimmed skin surface and the trimmed hole will follow exactly.

The particle tools are unique and useful. Particles are animated by behavior rather than by key-framing. That is, you specify the



THE LEAN AND HUNGRY LOOK: Extreme 3D 2.0's interface has a stripped-down look yet retains a few quirks.

number of particles, how fast they move, in what direction, ...and let the program do the rest. Any object can be a particle (for making smoke, steam, flocks of birds, and so on), and a particle system can be turned into a polygon mesh at any time, allowing you to create tree leaves.

The program provides no ray tracing, but the Phong renderer is very good, offering transparency, a new volumetric light feature (called Dust Cones), and very realistic shadow-mapped shadows with control over edge fuzziness and resolution. Eight-times oversampled anti-aliasing yields very smooth images.

For good measure, Macromedia added Virtual Reality Modeling Language (any model can have its own URL), QuickDraw 3D support, and rendering over a network—all valuable new capabilities. Some basic features, though, still need work.

Texture application tools are less than stellar. The intrinsic (ultraviolet) mapping is inept; it locks the map to one end of the object. This serious limitation requires you to size and fit maps by trial and error (Fractal Design Detailer can help). Also, you can't adjust the area of cylindrical and spherical maps in degrees, something that other programs can do.

You'll chafe at several obnoxious interface quirks. After using any modeling tool, Extreme 3D immediately reverts to the move tool, forcing another trip to the tool palette every time you want to repeat an operation. Rotating an object often requires three steps.

Extreme 3D provides a fairly standard animation timeline sequencer but no spline-based velocity graphs. Slow in/slow out sliders don't provide the same level of realistic movement control. Nor does Extreme 3D offer inverse kinematics, which is showing up in many competing 3D apps and even in Fractal's Poser 2.

If you're getting Extreme 3D as part of Macromedia's FreeHand Graphics Studio, as most users will, then you're getting good 3D at a great price. But if you're looking for a stand-alone animation program, check into Specular's Infini-D or Fractal's Ray Dream Studio before you make up your mind. —Raf Anzovin



FIND A DEMO OF Extreme 3D 2.0 on The Disc.

Sophistication, Baby

Mac 3D applications are becoming more sophisticated. Extreme 3D 2.0 boasts some slick new capabilities you couldn't get at this price just a few months ago. Here are three examples:



HE'S NO BUZZ LIGHTYEAR, but Bobby Man shows off Extreme 3D's Metaforms tools.



GIVE ME A SPOT: Beams of light are the latest 3D trick. Extreme 3D's Dust Cones add atmosphere to this architectural scene.



AND NOW, THE BUBBLY: In version 2.0, animated sprays of sparks are easy to generate. Better yet, any object can be a particle.



GOOD NEWS: Slick new metablobs. Volumetric lighting and particle animation. QuickDraw 3D support.

BAD NEWS: Image mapping and interface need more work.

reviews



reviews

Claris Home Page 2.0

DEVELOPER: Claris

CONTACT: 800-3-CLARIS, <http://www.claris.com>

PRICE: \$99 (street)

REQUIREMENTS: 68020 or faster processor, 8MB of RAM, System 7.1 or later, 2MB of free hard disk space (6MB for full installation)

When we reviewed Claris Home Page 1.0 (Nov/96, p58), we admired its interface but complained that it lacked many essential features. Among other things, the initial release didn't support client-side image maps, WYSIWYG table manipulation, or preview of background patterns, and it offered no help with managing or uploading a site. Frame creation was implemented but was a serious chore.

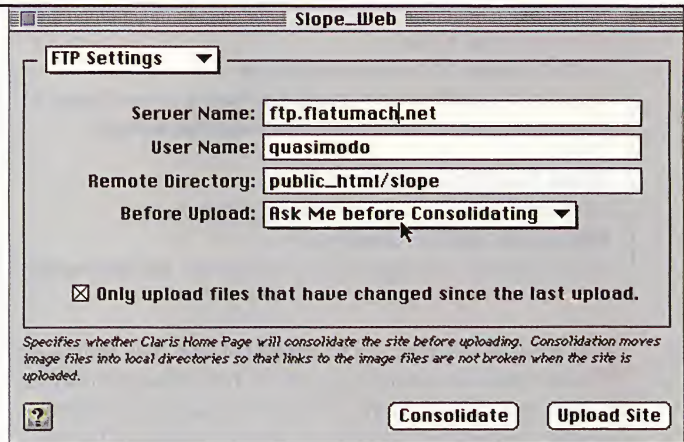
At first glance, version 2.0 looks pretty much like the original. The few improvements and additions, however, are significant. In several features, such as uploading your site, Home Page now beats the big boy on the block, Adobe PageMill 2.0.

All the attraction of version 1.0 remains: Home Page displays a good preview of the page and sports all the tools we've come to expect. Commonly used functions are available in a toolbar, search and replace is well implemented, and a scrapbook stores page elements. Nearly everything is handled via drag and drop or straightforward dialog boxes.

Home Page's four modes—WYSIWYG editing, browser-imitating preview, bare HTML text editing, and the new frame-editing mode—are selected via the toolbar. Image import and manipulation are fully supported. Version 2.0 adds refinements to HTML editing mode; for example, HTML syntax is now indicated by colors. The online help is well indexed and is a good supplement to the manual.

Home Page can now display a background image, which is handy when choosing font colors and backgrounds. You can spell-check the entire document or just a selection of text (though checking a selection locked up our Mac). Version 2.0 adds support for dragging Java applets and plug-in files onto a page. QuickTime movies are now previewed with a display of the first frame—better than nothing, but not exactly useful if your movies fade in from black.

In version 2.0, creating and manipulating a table is almost completely WYSIWYG. You can finally drag table borders to resize cells, and—hooray!—tab-delimited text is automatically pasted as a table. Frames, in contrast, are improved but remain half-baked. A window displays the arrangement of frames, and you can change frame sizes by dragging, but Home Page



YES, DAVE, UPLOADING NOW: This dialog is at the heart of Home Page's terrific new uploading capability.



THIS IS NOT A PREVIEW: You still have to switch back and forth between Home Page and a browser to create frames.

still doesn't display the contents. You have to switch back and forth to a browser to see what the final product looks like.

Home Page's most exciting new feature, which so far is unique among WYSIWYG page creation apps, is Remote Saving. On command, the application creates a "site definition file" to track the files and folders that make up your Web set. (While it's "consolidating" your site, however, it can't update broken local links. If you've changed your directory structure, you face the tiresome task of answering a dialog box for each broken link.) After a one-time setup with your provider's FTP information, a single click uploads your entire site onto your Web host. Home Page will also upload a single page and, optionally, that page's associated image files.

For simple sites or new Webmasters, Home Page first offers to move all the site's images into a folder (and corresponding remote directory) called Images. For more complex sites, there's an option simply to mirror the local folder structure.

If you want to tweak a page that you've already uploaded, Home Page's Remote Open will view and download any page from your site and will revert a local page to the version on your remote site.

The WYSIWYG page-creation battle has only two serious contenders. Home Page now meets or beats Adobe PageMill 2.0 in several important respects. If you work a lot with frames, then PageMill remains the clear winner, and overall it does a better job displaying true WYSIWYG files such as animated GIF files. But Home Page 2.0 sports a more intuitive interface, provides simple one-step uploading of your entire site, and allows tab-delimited text to be imported as a table. —Joseph O. Holmes



GOOD NEWS: Easy to use. Creates page statistics. Good image support. Excellent table control. Simple file upload to the Web host.
BAD NEWS: Still needs WYSIWYG frame creation.



FIND THE DEMO OF Claris Home Page 2.0 on The Disc.

Fit Your Image

If you're just starting out as a Web author, don't succumb to Home Page's offer to put all your image files into one Image directory. Think carefully about a sensible set of folders to contain icons and various categories of images. Changing your mind later can cause you no end of grief, specifying files' new locations, one at a time.



reviews

ATM Deluxe 4.0/ATR Deluxe 2.0

DEVELOPER: Adobe Systems

CONTACT: 800-492-3623, <http://www.adobe.com>

REQUIREMENTS: 68020 or faster processor, System 7.0.1 or later (System 7.1 recommended), 8MB of RAM, CD-ROM drive (floppy disks available)

Adobe Type Manager Deluxe 4.0

PRICE: \$49.95 (SRP) until May 1997; \$99.95 (SRP) thereafter

Adobe Type Reunion Deluxe 2.0

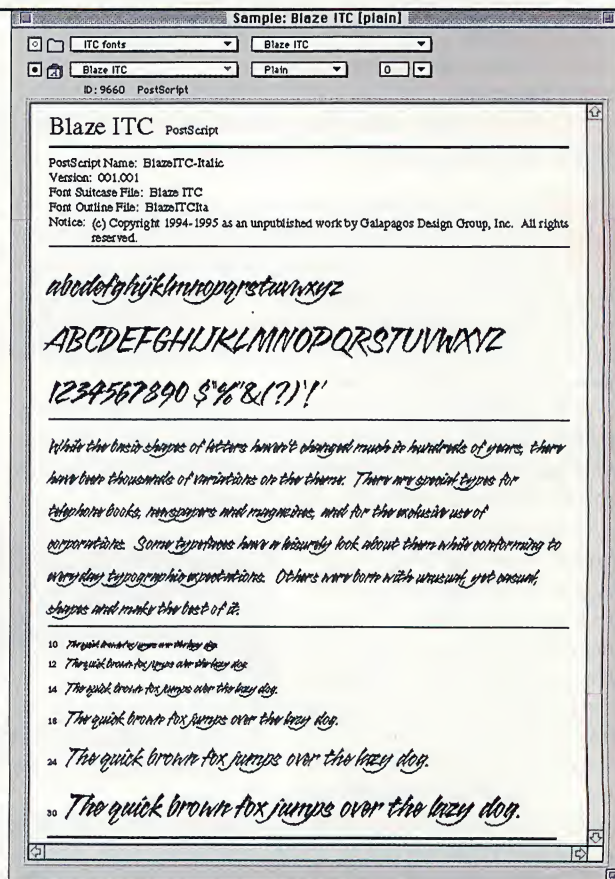
PRICE: \$29.95 (SRP) with upgrade/intro until May 1997; \$60 (SRP) thereafter

SPECIAL BUNDLE PRICE: \$69.95

For anybody with more than a handful of fonts, font utilities are a way of life. For several years, Adobe Type Manager (ATM) has been one of the standards. The new version not only improves on earlier features but also adds important capabilities, becoming an almost complete font management system.

The primary function of ATM historically has been to improve the appearance of PostScript fonts onscreen and allow these fonts to print at high resolution on a non-PostScript printer. The new version provides an option to anti-alias font rendering; it adds gray pixels along edges that might otherwise appear slightly jagged. This feature spruces up onscreen presentations but will probably be less useful to general users.

ATM Deluxe's other new features are even spiffier. Whether you use PostScript fonts, TrueType fonts, or a combination, font management can be a tedious and awkward process, especially if you've installed a lot of fonts in your System Folder (your list of fonts becomes too long for convenience, and your Mac devotes too much memory to keeping track of them). Several font management utilities—Symantec's Suitcase and Alsoft's MasterJuggler among them—let you store your fonts anywhere on your hard drive and then activate them as needed. The new ATM includes this management capability, too, which means that your Mac will have one fewer control panels taking up space and resources.



NOT ANOTHER FUNNY-FACE JOKE: Double-clicking a font in an ATM window produces a big sample sheet showing the typeface at different sizes. Print out sheets for all your fonts to create a font catalog.

Font Utility Alternatives

Adobe Type Manager and Symantec's Suitcase used to be a winning combination, but the new ATM largely replaces the need for Suitcase. The only feature that still gives Suitcase a slight edge is its ability to create temporary sets—groups of fonts that you activate for only a short time. For anyone running a Mac lab (a college lab or a service bureau, for instance), the ability to have font sets go away after a single use is a big help.

Adobe Type Reunion's competition is stronger than ATM's. Several other font menu utilities provide more options than Adobe's. For example, Now WYSIWYG Menus (part of the Now Utilities set) not only groups fonts into families and shows fonts in their own typefaces, but it also lets you decide the size at which to display individual faces (some script and display faces are hard to read onscreen at 10 or 12 points). Now Software's utility also lets you determine which typefaces appear in different applications. You might care to use only a few faces in your e-mail program but want all available faces in your page layout program. Luckily, the new ATM, with its highly desirable features, is compatible with font menu utilities from other vendors.

When you install ATM Deluxe, it offers to search your hard drive for fonts and add them to the Known Fonts list (see image on the next page). Clicking in the column to the left of a font's name turns the font on—makes it available to your system. The font will then appear in the Font menu in each of your programs until you turn it off again.

For more convenience, you can group fonts into sets so that you can turn off or on several fonts at the same time. For instance, you might create a set of fonts that you use for a monthly newsletter. Creating and modifying sets is easy and intuitive.

The news gets even better. ATM Deluxe now generates a look-alike typeface to substitute for a font you don't have. Substitute fonts may not look exactly like the original fonts that they fill in for, but they preserve the letterspacing and line endings of the original document. This substitution feature used to cost extra, back when the program was known as Super ATM.

The most exciting feature for fontaholics is auto-activation, which will warm the heart of anyone who regularly switches fonts around. With this feature enabled, when you open a document



A SET AND A PERM, PLEASE: ATM Setup is easy—simply drag and drop fonts from the Known Fonts list to folders in the Sets window.

that uses a font not already active, ATM automatically activates it. As long as a font is in the Known Fonts list, it will automatically be available when you need it and go away when you don't. No more "This document uses unknown fonts" messages!

A last tidbit: ATM Deluxe 4.0 displays and prints samples of your font collection. Many people buy separate utilities for this purpose.

Adobe Type Reunion

One thing that ATM won't do for your fonts is organize the appearance of your Font menu. That's where Adobe Type Reunion Deluxe 2.0 (ATR) comes in. Many fonts, especially PostScript fonts, can create unruly displays in your Font menu, with names such as B Times Bold, I Bodoni Italic, or even CXBO Futura Condensed Extra Bold Oblique. Because the Font menu displays its contents in alphabetical order, families of fonts become spread all over a needlessly long list. ATR pulls fonts back into their families; the family name appears just once, and the members of the family (bold, italic, and so on) appear in a pop-out menu—a much more satisfactory state of affairs. Also, ATR can display your fonts in their actual typefaces.

New features include the ability to display selected typefaces in groups and to place recently used faces at the top of the Font menu, thus helping you avoid long scrolling times.

ATM and ATR have some joint tricks, too: ATR's menu allows you to open the ATM Control Panel or to open ATM sets without opening the ATM program.

Overall, the new Adobe Type Reunion offers solid improvements over earlier versions, but it still is not as full-featured as some of its competitors (see "Font Utility Alternatives," p66). Adobe Type Manager has evolved into an essential utility that now manages your fonts in addition to making them look good. —*Jim Alley*

Adobe Type Manager Deluxe 4.0



GOOD NEWS: Now handles many of your font needs, thus replacing several other utilities. Auto-activation and substitution are valuable bonuses.

BAD NEWS: No way to create temporary sets.

Adobe Type Reunion Deluxe 2.0



GOOD NEWS: Much improved over earlier versions.

BAD NEWS: Still not as full-featured as the competition.



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Poser 2.0

DEVELOPER: Fractal Design

CONTACT: 800-846-0111, <http://www.fractal.com>

PRICE: \$199 (SRP)

REQUIREMENTS: System 7 or later, Mac with an FPU (or PowerPC processor), 6MB of application RAM, color monitor

The urge to play with Barbie dolls (or GI Joe "action figures," for those of you more militarily macho-minded) doesn't go away when you grow up. It just hides deep inside, which allows you to get a job and function in society rather than play with dolls all day. Fractal Design has thrown a wrench into this respectable way of life with Poser 2.0. This software lets you pose one of several three-dimensional human figures in a near-infinite number of positions, anything from sitting to standing to being abducted by aliens.

The folks at Fractal have done much that is right in this program, and that includes fine control of the figure. To change a figure's pose, merely select a tool from the palette, click on a body part, and move, twist, or lift it into the proper place. You can alter any part of a figure's body (for example, make it thin or fat, or give it Popeye forearms), or you can choose from numerous poses and body types available in a customizable library. Poser uses something called inverse kinematics to control the way in which body parts move: If you move the hand, the rest of the arm follows naturally, bending the way that the wrist, elbow, and shoulder joints bend.

You have a choice of an adult male, adult female, child, skeleton, mannequin, or "stick" figure, and you select casual or business attire for it. With a couple of mouse clicks, you can change camera angles and add lighting effects. About the only thing Poser doesn't allow you to control is what the head looks like. All Poser figures are bald (unless you add a hair "prop," which basically is a digital toupee and works about as well as you'd expect). And you have no control over facial features. Unfortunately, because so much of a human figure's presence and emotion are carried in the face, Poser figures all look similar.

You aren't limited to human forms in Poser. You can bring objects in several 3D file formats (3DML, Wavefront OBJ) into Poser to use as props. These objects, which can range from briefcases to battleships, can be linked to your figure so that they move with it. You also can import PICT images to use as backgrounds (try creating a wild world with MetaTools' KPT Bryce as a background for your Poser figure), or you can import QuickTime or AVI movies to use as backgrounds in animations.

Poser's animation studio lets you bring your figure to life. By posing a figure in various keyframes, you can play drill sergeant and have it doing jumping jacks in no time. These animations can be saved as QuickTime movies or as a series of PICT files.

Although Poser is great at rendering the human form (which is notoriously difficult to get just right), it is limited. This is where other graphics programs come in. Just import your Poser image into your favorite graphics program (or QuickTime movie into an animation studio), and you can do further detail work, tweaking your figure to near-perfection.

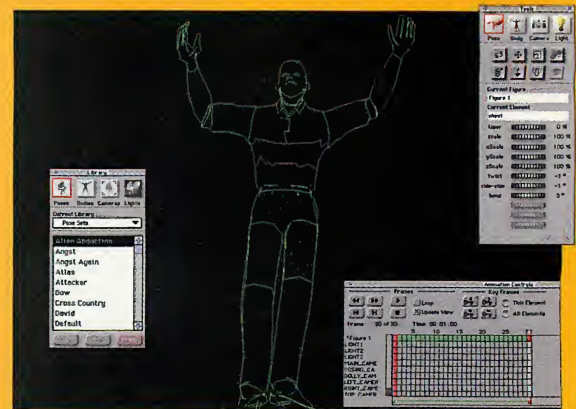
If you're interested in art or animation involving human forms (or just want to satisfy your desire to revert to childhood), Poser 2.0

ANIMATION 1-2-3-4:

Creating a basic Poser animation is easy and fun. Well, more fun than with traditional 3D rendering and animation applications.



Select the first keyframe and put your figure in the starting pose.



Then select the final keyframe and put your figure in its final pose.

Animation

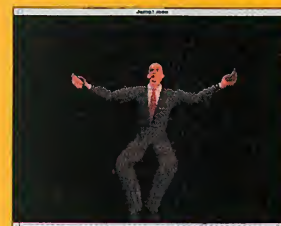
Animation Setup...

Make Movie... ⌘J

Keyframe Settings... ⌘K

Retime Keys...

Select "Make Movie..." from the Animate menu.



And that's it. Poser fills in all the frames between keyframes, delivering a QuickTime movie of your animation. You can save your animation in a variety of formats, including a series of stills.

is a great place to start. It runs with decent speed on any Mac with a math coprocessor and it was also amazingly responsive on a 180MHz 604e, and the interface is clean and powerful. If Poser included some way to change facial expressions (and some less-ruggish way to do hair), it would be darn near perfect. As it is, it's the digital doll of choice. —David Reynolds



GOOD NEWS: Making human forms is easy. Intuitive interface for basic operations. Painless animation. Lots of import and export formats.

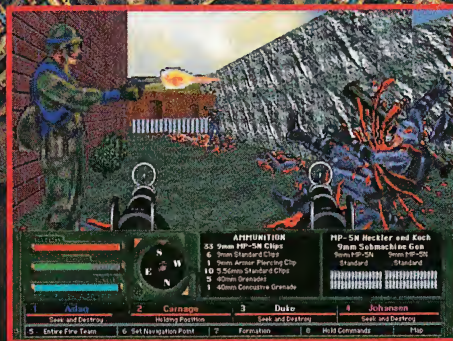
BAD NEWS: Figures tend to look the same. Need other software tools to customize Poser figures.

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MacInTax Deluxe

DEVELOPER: Intuit

CONTACT: 800-446-8848, <http://www.intuit.com>

PRICE: \$49.95, \$24.95 state versions (street)

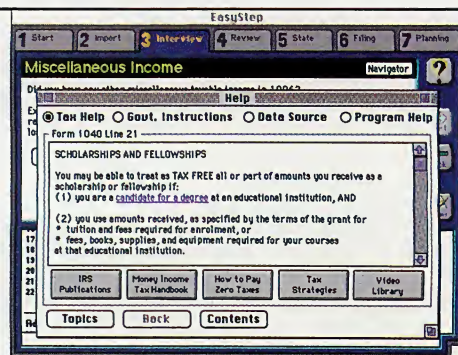
REQUIREMENTS: 8MB of RAM, 68030 or faster, System 7.0 or later, CD-ROM drive

Back in 1991, MacInTax was little more than a set of IRS forms with manual entry and automatic totaling. Still, that alone made doing your taxes a bit easier. Now it's 1997 and darned if MacInTax doesn't have videos, IRS publications, two top-selling tax strategy books, flexible data entry options, and add-on modules for preparing state returns—in short, everything that you could ask for when preparing your taxes, other than the ability to eliminate them entirely.

MacInTax provides two methods of entering tax data: straight into the forms or through an interview process. (Also, you can import tax data from Quicken and other personal finance programs.) The interview method is slower, but a better bet for those unfamiliar with the process. Swapping between methods is no problem.

The interview method has a clean interface divided into seven sections, each represented by a tabbed folder icon. Simply go through the sections one at a time, answer MacInTax's questions, and before too long your tax forms are filled out. Help is always available: click on the help button for advice on tax laws, help with the program itself, and actual IRS publications. At times you'll be able to see a video about a commonly confusing subject—capital gains or selling a home, for example. These videos also link to the corresponding section of an IRS publication.

The interview process is streamlined from last year's version, making it less tedious for those who are more familiar with tax forms and laws. For example, instead of forcing you to go to a separate screen to enter data from each line on a W-2 form, the program now groups most of the W-2 lines onto one interview screen. And, if you get antsy with the interview, you can always jump to the forms view and fill in data there.



HELP! I THINK I'M FILING: If ever you get stuck on a fine point of filing your taxes, MacInTax can spring to the rescue with an array of well-deployed resources.

If you get stuck on an unfamiliar section, simply jump back to the interview. At any time, you can click on the navigator button to find out how far along you are, which interview topics you have completed, and how much more ground you still have to cover. Additionally, you can at any time review your return for errors. You can fix them on the spot or display them in a list, fixing them as you feel up to it.

Once you have entered your data and fixed any errors that MacInTax has found, you can print the forms or submit them electronically. If you've bought one of Intuit's state modules (they're available for all 45 states that have state income taxes), you can have it automatically extract pertinent information from your completed federal return—a true timesaving feature. State forms can be purchased and downloaded from Intuit's Web site, and an interview, as well as forms, are included.

Personally, I prefer just using the forms for doing taxes. I find it faster. But for anyone who is leery of doing their own taxes or who isn't sure what the heck the line on the form is asking, then the interview is extremely helpful. And Intuit has definitely improved the integration between the two methods so you're not boxed into just one or the other. Given that you have to do taxes, this is the only way to go. —Cheryl England

GOOD NEWS: Very flexible data entry options. Tons of excellent tax and program help. Streamlined interview method. Good resource publications included.

BAD NEWS: It still won't make April 15 go away.

reviews



reviews

Command & Conquer

DEVELOPER: Westwood Studios

CONTACT: 800-874-4607, <http://www.westwood.com>

PRICE: \$49.95 (street)

REQUIREMENTS: PowerPC, System 7.5 or later, 8MB of RAM, 40MB of hard disk space, CD-ROM drive (for Internet play: 16MB of RAM, MacIPX Control Panel, 14.4Kbps modem or faster Internet connection)

As with all real-time strategy games, Command & Conquer provides an almost-real-world experience. Units can move only so quickly, but while you dink with a platoon here, you might be attacked over there. But when compared with other real-time strategy games, such as Microsoft's Close Combat (Nov/96, p80) and Blizzard Entertainment's Warcraft II (Dec/96, p86), C&C takes the field.

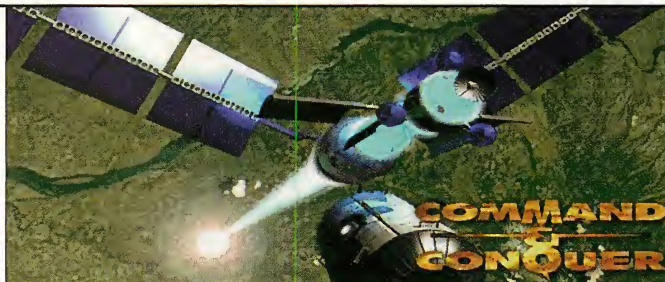
Even though C&C originated on the PC, Westwood replaced C&C's original VGA graphics with super-clean, high-resolution screens. Although individual units are small (but easier to see than those in Close Combat), you can make out which weapon they're carrying and even watch them drop for push-ups if left idle too long. These details give C&C a less cartoony feel than Warcraft II, with its lumbering Orcs.

In C&C, you choose which side to play, the United Nations-sanctioned Global Defense Initiative, or GDI, (the good guys) or the Brotherhood of Nod (the bad guys). From then on, you are assigned mission after mission, each expanding your objectives and available arsenal. Sometimes a failure will set you back, sometimes it means the end of all you hold dear—Game Over.

Gameplay makes C&C worthwhile. You control your units in real time, leading them to attack, patrol, or defend; you also manage resources, build bases, and, once you've knocked out the enemy's surface-to-air missile sites, call in airstrikes. Even tactical nukes are at your disposal. Missions range from inserting a commando into an enemy base to rescuing a captured scientist to wiping the enemy off the face of the earth. All require strategic and tactical planning. You can't win without building a strong base and creating a hefty attack force, but simply having these assets doesn't guarantee a win. The enemy, via artificial intelligence, harasses you with incursive raids and diversionary tactics, and it won't always fall for your traps. Maneuvering the terrain and knowing enemy troop position and strength, and the enemy base layout, are crucial for success, as is a smart use of specific troops and vehicles.

Strategy game fans will be happy with the level of planning required. Twitch-game fans will love the responsive control and the screams of troops falling to flamethrowers.

Resource management is a direct holdover from C&C's progenitor, Dune 2—you must continually



SPEAK SOFTLY AND CARRY A BIG ION CANNON: This baby is just one of the blue-sky weapons you'll have at your disposal.



WALK RIGHT IN: A strongly defended base is key. Oddly, the guy with the flamethrower is doing real damage to the northern guard tower.

harvest tiberium. It's one of those things that doesn't really fit, much like the barracks' amazing ability to churn out soldiers so far from any population source. Missions range across Africa and Eastern Europe, but the game uses only a few terrains, and some maps are unnecessarily maze-like. Also, the interface has a few oddities, such as the Options menu being accessible only via the Escape key, and (Warcraft players, note) once you've selected a unit and moved it, it remains selected. Make sure you remember to deselect it.

C&C is networkable over the Internet. Local-area network action is as smooth as silk, and the chat function adds greatly to gameplay. For Internet games, you must register (free) with a Westwood chat server, and then gather or join a game. However, we tried many times to join or set up a game but were unsuccessful due to busy servers.

These quibbles aside, C&C is one immersive game. Close Combat has a higher factor of realism, but micromanagement is a bonus in Command & Conquer, not a constant worry. Each mission takes one to four hours, not counting mission replays. When you've won as the GDI, you can play all-new missions as Nod, or vice versa. Your greatest challenge will be the return to civilian life. —D. D. Turner

Conquer This!

There are no cheat codes in Command & Conquer and no sure-fire ways to win every time, but here are a few rules of thumb that will help save you from flaming defeat.

1. Build up your forces.
2. Don't bunch up against flamethrowers.
3. To beat a pesky Obelisk of Light, either attack with a huge swarm of disposable troops, which might take it out between recharges, or try to take out the power plants that feed it.
4. Be sure to set your base near a replenishing tiberium field, then defend it well.



GOOD NEWS: Tough, addictive gameplay. High-quality graphics.

Good opponent intelligence. Network play locally or on the Internet.

BAD NEWS: A few control problems with tiny units. Bad guys are always better equipped.



reviews

Epson PhotoPC 500

DEVELOPER: Epson America

CONTACT: 800-60-EPSON, <http://www.epson.com>

PRICE: \$499 (street)

REQUIREMENTS: 68040 or PowerPC, System 7.5 or later, 8MB of RAM (16MB recommended), 25MB of hard disk space, CD-ROM drive, serial port, 256 colors

Let me come clean. I opened the box to Epson's newest foray into the digital camera arena expecting to like it. Like it? Hell, I expected to love it. The original PhotoPC (now downgraded to red-headed stepchild) was one of my favorites among the plethora of budget-priced digital cameras out at the time. Epson's camera delivered consistently sharp images and remarkably good color in both natural lighting and in flash mode. However, it had a few shortcomings. The good news is Epson fixed them. The bad news is...well, there is no bad news. Really. The new PhotoPC 500 is leaner and meaner and contains no MSG. Its 24-bit color images still look as crisp and sharp as ever, only now you have more of them to love.

The original PhotoPC came with 1MB of RAM, which translated into the ability to take a whopping eight high-resolution photos or 24 low-resolution photos before having to go home and download. The PhotoPC 500 comes with 2MB of RAM, which allows the shooter to



NOW WITH LESS MASS! The PhotoPC 500's slimmed-down shape fits your hand much better, and it holds more pictures than its predecessor.

snap 30 640-x-480-pixel, high-res or 60 320-x-240-pixel, "standard"-res photos. This boost lifts the PhotoPC 500 up to the top of the photo storage heap and helps make all the difference when choosing to pack the camera along on a day trip or not. To be fair, both cameras could accept more memory. An extra 2MB memory module runs \$199; an extra 4MB module, \$299. But let's face it, who wants a product that you essentially have to upgrade right out of the box?

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The PhotoPC 500 retains the equivalent of a 43mm lens, which is a little narrow for scenic vista shots and a little wide for mug shots. Its automatic aperture of f2.8 to f8 is an improvement over the PhotoPC père's maximum aperture of f5.6.

For consumers who love the shape and feel of a brick, the original PhotoPC was the answer to their prayers. Epson has since put the camera on a strict celery and rice-cake diet, whittling it down from a hefty pound and a half to a svelte 2/3 pound. The PhotoPC 500 is more of an ergonomically sensitive '90s kind of camera, fitting into the curve of the hand like a... smaller, gray brick.

With the PhotoPC 500, Epson replaced the adequate-but-clunky EasyPhoto with a program called PhotoPC 500 Imaging Software. (Nice ring, don't you think?) The bundled software is split into two parts: Epson Photo!, with which you fine-tune the downloading process, and Epson PhotoPC 500, with which you group photos into "albums" and then manipulate them through an Adobe Photoshop-like interface.

Downloading images from the camera takes the touch of a button. You may prefer to preview them in Epson Photo! so you can pick and choose. Images save to the hard drive in just 13 seconds each.

One of the beefs I had with EasyPhoto was the way it grouped thumbnail images into "galleries." Conceptually, the idea was great: You saw all the images from Uncle Fester's party when you sat down to select which ones to tweak and which to trash. It was like having

negatives in the little folder from Fotomat. Unfortunately, somebody thought it would be cool to make the galleries look like long strips of negatives. It wasn't. The new PhotoPC 500 Imaging Software groups

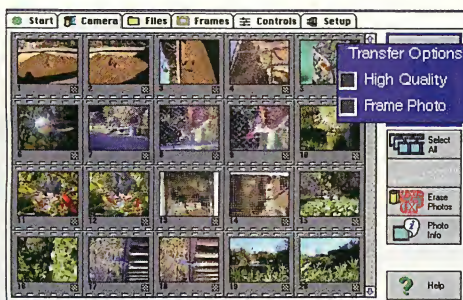
images into photo "albums" that display all the thumbnails onscreen at the same time. Double clicking a thumbnail triggers the image-editing package.

The software has most of the basic image-correction tools, but it took some time to find everything. Photoshop-savvy users will probably miss the curves palette for color correction. Buried under the Image menu, however, are RGB sliders and Brightness/Contrast controls.

The text tool works in the same way as Photoshop's. Typed text becomes a floating layer until you drop it. Setting the background color took some searching but was pretty intuitive once I found it. PhotoPC 500

features nonadjustable controls for blurring and sharpening with only two choices: a little and a lot. The program makes up for this rigidity by including fully adjustable Unsharp Mask under the Filter menu.

At a list price of around \$500, Epson has delivered a great package for anyone from novice to full-blown pixelhead to get into digital photography. —Ray Larsen



FINDING A KEEPER: This screen is where you select photos to download to the hard drive. A few points are confusing; for example, what does that High Quality button mean, exactly?



GOOD NEWS: Good storage capacity in price range.

Sharp images and good color.

BAD NEWS: Some software awkwardness.

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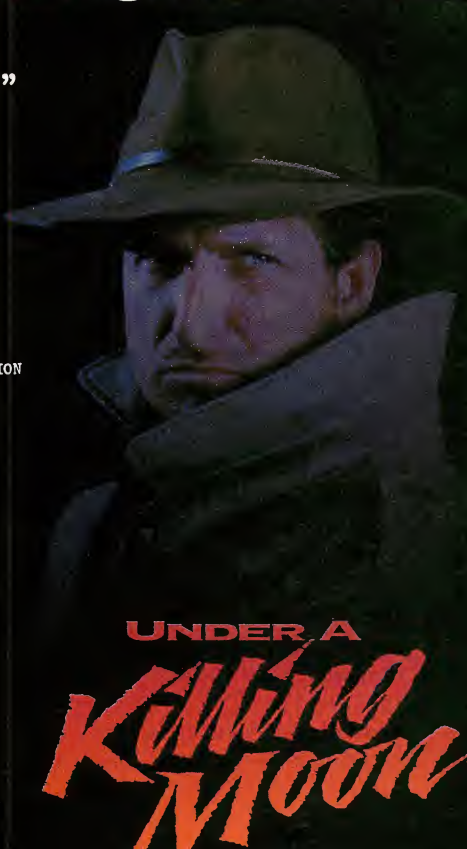
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Under A Killing Moon stars Brian Keith (*Hardcastle & McCormick*, *The Parent Trap*), Margot Kidder (*Superman I, II, III*), Russell Means (*The Last of the Mohicans*, *Natural Born Killers*), and features the voice of James Earl Jones (*Star Wars*, *Field of Dreams*, *The Lion King*).



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reviews

ATI Xclaim VR

DEVELOPER: ATI Technologies

CONTACT: 905-882-2600, <http://www.atitech.com>

PRICE: \$269 for 2MB version, \$349 for 4MB version (SRP)

REQUIREMENTS: Power Mac with one free PCI expansion slot, System 7.5.2 or later, 16MB of RAM

One of the Mac's most elegant features, one which we've always held in the faces of PC users, was that we didn't need to configure sound cards, video cards, or mouse drivers. Everything we needed was built in, right? Well, not so much. If you wanted to capture or export video with the 7500 and 8500 series, you could get only 160-x-120-pixel windows at 30 frames per second (fps). Also, some Macs (such as the Performa 6400) couldn't take enough video RAM to get better than 256 colors on a 17-inch monitor. It was enough to make you give in, crack your Mac's case, and slide in an actual board.

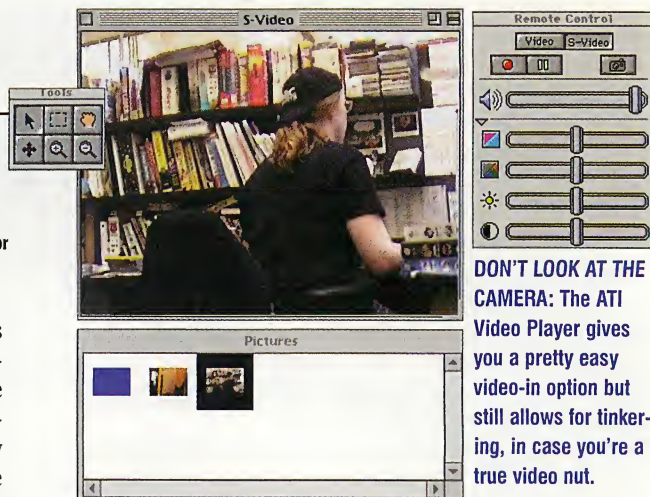
The solution is at hand. For most people, ATI Technology's Xclaim VR might be the board to grab, with its 5-in-1 offering of QuickDraw 3D acceleration, enhanced resolution and color depth options, QuickTime capture and playback, and the Mac2TV ability to run your Mac's display on a television. The price for the 2MB Xclaim VR is about that of two 1MB VRAM chips, which alone will give you thousands of colors on a 17-inch monitor but won't do bukkus for the rest. And for users with non-VRAM-upgradable Macs, this may be the only way to get the color depth that Adobe Photoshop and, OK, games, require.

Installation is easy. Simply open your Mac, find an empty PCI slot that will fit a 7-inch board, and gently settle the board. The manual has plenty of illustrations and suggestions to shepherd the newbie through the process. Software installation is easy, too. Slap in the supplied floppy, double-click the installer, restart, and the ATI Displays control panel is there for your use. And useful it is, giving you not only control of the Xclaim VR's features but also a Display Details window that provides information about the various software components you've just installed, an option to set keyboard shortcuts for changing your desktop settings, and even the ATI Guide, an AppleGuide resource in case you can't quite figure out what you're doing.

QuickTime Capture and Playback

First off, the Xclaim VR makes no claims to be a professional video-capture solution; pros will need to capture larger than a 320-x-40 window, even at 30 fps. However, for most users, who want to make the full-motion equivalent of snapshots or to input home movies for editing, this beats any option available on a stock machine.

All you have to do, with your Mac and video source (camcorder, VCR, digital camera) turned off, is plug composite or S-Video cables from the Xclaim VR's ports to the source, turn on the units, and launch



DON'T LOOK AT THE CAMERA: The ATI Video Player gives you a pretty easy video-in option but still allows for tinkering, in case you're a true video nut.



HERE'S WHERE IT ALL HAPPENS: Not only does the ATI Displays control panel look cool, it gives you useful information.

the included ATI Video Player application. (Alternately, you can use any third-party video-capture software, such as Intelligence at Large's MovieStar, as long as it recognizes the ATI Video Digitizer as a source.) You can get live playthrough from your camcorder to monitor the scene, and also set compression, capture frame rate, keyframes, and quality on a scale of 1 to 100. We had no problem getting 30 fps at 320 x 240 and found the video to be excellent, though not broadcast quality. One difficulty is that because the hardware plays its accelerated video in an overlaid layer on the screen, you can't play back the captured video with acceleration without quitting Video Player. To check your work, you'll have to quit

Video Player, run the clip, and if it's not perfect, launch Video Player again, and maybe again.

One tip: Capture large, then scale down. It will take more memory (even 320 x 240 takes up 60MB of hard disk space for 15 seconds of footage) and more compression time, but resizing upward is always riskier, quality-wise.

When you play a QuickTime movie, even in the humble MoviePlayer, the Xclaim VR's hardware acceleration is obvious. Scaling any movie, even a low-res clip downloaded from the Internet, calls up the board's hardware acceleration, which uses a witches' brew of alpha blending and chroma interpolation. The result is easy to test: Hitting Command-2 (MoviePlayer's normal Double Size function) uses only the software's pixel-doubling algorithm, which looks maybe OK. Drag the movie's window to about double size, and the Xclaim VR kicks in—the movie looks like smooth video on a dedicated editing deck, with no pixelation. Even at full-screen size, we didn't notice any dropped frames or audio skips. One note: QuickTime movies must be compressed in Cinepak or Indeo format to take advantage of the card's scaling abilities. Fortunately, most clips you'll encounter use these codecs.

Two-dimensional Graphics

Although the Xclaim VR speeds some classic (i.e., non-3D)

QuickDraw operations, ATI doesn't sell this card as a 2D graphics accelerator, and wisely. People looking at this for Photoshop filter acceleration or the like will be disappointed. This simply is not what the Xclaim VR does. It will, however, to a small degree, speed scrolls along large images or files. Rather than speed increases, the major benefit is the extra color bit-depth at higher resolutions. With our 4MB Xclaim VR, we were able to display millions of colors at up to 1,280 x 1,024 pixels at a flicker-free 75Hz on a 17-inch monitor. With the standard onboard VRAM, we could get that resolution but only at thousands of colors. Again, simply adding the same amount of VRAM to your motherboard would set you back about the price of the Xclaim VR card. How do they do it? Volume!

Mac2TV

Say you've got a big-screen TV and want to show off your home movies to friends or demo a program. Sometimes a 17-inch monitor just isn't big enough. With Mac2TV, you can connect ATI's video-out cable (supplied) to either a composite or S-Video input on your TV (make sure your TV and computer are turned off first, though). From within the ATI Displays control panel, click the Mac2TV button, and turn on Video Output. Your TV will mirror your monitor.

With composite output, there was a good deal of banding on the TV's screen—text smaller than 18 points or so was lost, and larger text was still difficult to read, no matter how we adjusted the sharpness and other controls. Movies, especially full-screen ones, looked good; although not broadcast quality, they worked for a presentation or for a "gather 'round the screen, kids." With a composite output, text was fine on a large-screen TV, and movies were impressive. It still wasn't monitor quality, but what are your chances of getting access to a 27-inch monitor? For less than \$350?

QuickDraw 3D Acceleration

OK, the real reason why a lot of people are going to buy this board is that it comes with Bungie's latest game, Weekend Warrior, which uses QuickDraw 3D 1.5 to create a totally rendered world on the fly. You could run this program on a sufficiently fast Mac (say, about 225MHz), but you'd still lose certain features, such as transparencies. Or, you could keep your slower machine and let the card do the heavy lifting, which it does quite well. Reality Byte's Havoc and Balanda's upcoming Damage also will show sizeable speed gains, and more than a dozen "real" applications such as Fractal Design Detailer and RayDream Studio, Specular's Infini-D 3.5, Strata's StudioPro 2.0, and NewTek's Lightwave 3D also will reap the benefits.

We ran our tests using Gerbils! 1.03, a free program from Pangaea Software that demonstrates QuickDraw 3D's capabilities. With basic textures on, a standard Performa 6400 ran at 15 to 30 fps, while the 6400 with the Xclaim VR churned out 25 to 55 fps. With all the textures, including sky and rain, the gap was less dramatic but still pronounced: 10 to 18 versus 15 to 28 fps.

The Xclaim VR won't improve your breath or posture, but it will do almost everything else to improve your visual Mac experience. Serious videographers and power graphics gurus may want to look at more specialized (and expensive) cards, but the majority of people—who want improved multimedia capabilities, 3D acceleration, a neat TV-out feature, and colors colors colors—couldn't do any better. —D.D. Turner

Hoyle Classic Games

PUBLISHER: Sierra On-Line

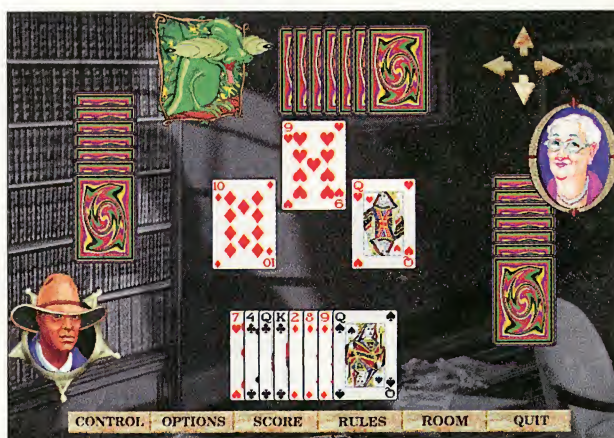
CONTACT: 206-649-9800, <http://www.sierra.com>

PRICE: \$24.95 (street)

REQUIREMENTS: 68040 or PowerPC, System 7.1 or later, 8MB of RAM, 2X CD-ROM, 3MB of hard disk space

Mac card game enthusiasts can sleep easy, now that Sierra has released Hoyle Classic Games, one package with eight card and two board games: Poker, Bridge, Cribbage, Crazy 8's, Hearts, Solitaire, Old Maid and Gin, and Backgammon and Checkers.

Hoyle Classic gives you a great variety of playing options. You can choose from three different types of opponents—animated characters, icons, and business—each with a skill level and a biography. Playmates are female, male, elderly, youthful, black, Asian, white, reptilian, or canine, not to mention beginner, average, or expert.



TAKE ANOTHER CARD, IF YOU DARE: There are plenty of fun backgrounds and characters, which is good, because gameplay needs the boost.

The animated cartoons speak and seem to interact with each other. The Attitude Meter adjusts their sportsmanship from serious to absurd. You also have a choice of rooms, music, and decks—from Suspense (mystery music) to Rain Forest (jungle sounds) to Urban (hip hop).

Still, none of these bells and whistles can turn a game of Crazy 8's into anything other than, well, a game of Crazy 8's. Even though response time and game speed are adjustable, the games—other than poker, perhaps—are hardly challenging. Hearts and Gin require a little thought, but Solitaire is no better than the shareware versions, and Old Maid is a no brainer. The two board games are the weakest spots of the set—Backgammon's interface is far from intuitive, and Checkers feels rote.

Nonetheless, the games do provide interesting visual effects, and decent artificial intelligence. A minus is that although the set includes files which explain game rules, nowhere is the interface explained.

For \$24.95, Hoyle Classic Games is OK. But if you're not already a card lover, this won't make you one. —Rebecca Lynn Eisenberg



GOOD NEWS: Easy installation. Adds multiple and powerful capabilities. Reasonable price.

BAD NEWS: Composite output to TV gives difficult-to-read text.

ATI Video Player conflicts with Connectix's RAM Doubler 2.



GOOD NEWS: A great variety of environments. Decent gameplay.

Low price.

BAD NEWS: No game is outstanding.



reviews

Prime Target/ZPC

Prime Target

PUBLISHER: MacSoft

CONTACT: 800-229-2714, <http://www.wizworks.com>

PRICE: \$34.99 (street)

REQUIREMENTS: PowerPC processor, 8MB of RAM, CD-ROM drive

ZPC

PUBLISHER: GT Interactive Software

CONTACT: 800-469-5961 xW600, <http://www.zombie.com>

PRICE: \$49.95 (street)

REQUIREMENTS: 68040 or PowerPC processor, 8MB of RAM, 2X CD-ROM drive

Imitation is the sincerest form of flattery, or something like that. But when people pay to flatter—as when MacSoft and GT Interactive Software licensed Bungee's Marathon engine—it goes beyond sincere to worshipful. Although both Prime Target and ZPC are based on Marathon, the two games take separate approaches to look-and-feel, and that makes all the difference.

Prime Target is set on election eve 2004. You play a former Secret Service agent who receives a call from a friend, Senator Cathryn Mayfield. Armed men have entered a Senate office building and are frantically searching for something. You go to her rescue, shooting all who shoot at you. You meet goons, guards, ninjas, skinheads, mercenaries, and muscleheads, showing them the business end of several weapons and shooting your way through Washington, D.C., as you try to find out who's behind the mayhem.

Prime Target capitalizes on the Marathon engine: Gameplay is fast; bullets move at realistic speeds; you can jump and crouch; doors swing open; blood splatters; bullets leave holes in the wall; office furniture pushes out of the way. You find items such as memos (which provide clues), and a headset radio (which lets you hear what your opponents are doing—sometimes). You pick up various weapons (from a Beretta to a nitrogen gun), and you keep yourself healthy by finding bandages and medical kits.

The action in Prime Target is rockin'. Fast movement combined with a well-tuned engine serve to keep the adrenaline level high. Headphones are a definite plus when playing Prime Target, as you



WE'RE ZOMBIES. WE'RE SUPPOSED TO DRESS ALIKE: It's a grim, grim world in ZPC, and you're the Reaper. Those silver things are Nectar of the Vanquished, which makes you feel better.

can hear the direction from which opponents are approaching.

ZPC (Zero Population Count) takes a different approach, emphasizing style and story. ZPC has a tone all its own, with stunning constructivist-style artwork by Aidan Hughes and music by folks from the bands Ministry and Revolting Cocks. This disturbing world feels like a cross between Stalinist Russia and Nazi Germany. In this first part of a trilogy, you're a Psionic Warrior Messiah returned from cryonic sleep to defeat the Black Brethren in a world of bureaucrats, soldiers, supplicants, and zombies. You have two weapons at your disposal: the Johnny 7 multipurpose gun and your chi punch. Your Johnny 7 (a very cool gun) is more versatile than anything Ronco ever released. Use it to bludgeon, fire grenades, and wreak havoc in many other ways. Your chi punch, on the other hand, isn't so powerful. It's more useful as a tool. You can use it in the same way you grenade-hop in Marathon: Look down, punch, and you'll be flying through the air. To recover health, you feed on the Nectar of the Vanquished, which appears after defeating a foe.

With all this imagination, ZPC gets off to a great start. But then it stalls. The game's story line takes place between levels, splitting plot and action. The game engine is slow compared with Prime Target's, so dodging bullets and zombie spit is an easy task. Although the artwork is undeniably cool, it goes only so far. After playing a few levels of ZPC, you come to the realization that what's behind the style is run-of-the-mill carnage. Not bad, but we've been there before. —David Reynolds

P. S. Even though these games are based on the Marathon engine, the Marathon Cheater won't work on your saved files. We tried. Oh, and Forge and Anvil won't modify maps or shapes, either.

Prime Target



GOOD NEWS: Fast gameplay. Cool mystery story. Details such as blood stains and bullet holes appear in response to your actions.

BAD NEWS: Cheesy backstory for main character.

ZPC



GOOD NEWS: Great concept and artwork. Fun to be a Psionic Messiah. Works on '040-based Macs.

BAD NEWS: Gameplay is slower than in Prime Target. Feels a lot like Marathon Infinity with a new set of shapes, textures, and sounds.



FIND A
DEMO OF
Prime Target
on The Disc.



CLINT! WHAT ARE YOU DOING HERE?: The cut scenes in Prime Target aren't really movies, but they are all the plot you get. Think a more static MTV ad.

Damage Incorporated




As of press time, we weren't able to get our sweaty little hands on a copy of MacSoft's other Marathon-engine title, Damage Incorporated. This is another first-person shooter, but the twist is that you'll be able to command four Marines at a time (three other than your viewpoint, that is), in a sort of Command & Conquerish way. MacSoft promises six missions with more than 30 levels. No ambiguity here, just enhanced tactics and enhanced carnage. One interesting feature is that each Marine has a personality and certain skills that affect his probability of completing particular tasks; this means that you must not only play your own game but also be careful whom you send to do what.

THE SEQUEL TO *Heroes of Might and Magic*,[™]
THE 1995 STRATEGY GAME OF THE YEAR – *Computer Gaming World*



TAKE A
This long-awaited sequel is a feature-by-feature enhancement of
everything that made the original *Heroes* an all-time Macintosh
strategy classic. Scores of new hero
STAB AT
and monster types, alliance formation for team play, enlarged
combat maps, increased multi-player options, and a flexible
“World Builder” module are
THE ROYAL
just a few of the reasons why *Heroes II* for Macintosh will
be a prized addition to your CD-ROM treasure trove.
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NEW WORLD COMPUTING[®]



cd-roms

GIRLFRIEND'S GUIDE TO PREGNANCY ■ THE TICK ■ EYEWITNESS VIRTUAL REALITY: CATS ■ PICASSO ■ KLONDIKE GOLD

One can't think of a better way to enjoy the sights and sounds of springtime than being locked away in a dark house engrossed in CD-ROMs. This month we look at five titles: four tempted to make holing up in your home even more pleasant, especially if you're pregnant, dote on cats, patronize Picasso, or think a certain crime-fighting insect and his mothman sidekick are keen. Only one disc dared to disappoint, leaving gold diggers empty-handed. Read on to discover how best to cultivate your disc collection. —Joe Mahr

The Girlfriend's Interactive Guide to Pregnancy

PUBLISHER: Simon and Schuster Interactive
CONTACT: 800-910-0099,
<http://www.ssinteractive.com>
PRICE: \$39.95 (SRP)
REQUIREMENTS: 2X CD-ROM, System 7.1 or later,
 68040 or faster, 8MB of RAM



If you're pregnant (or would like to be), chat with a group of girlfriends for all the down-and-dirty details surrounding the blessed event in this nauseatingly so-cute-you'll-want-to-puke CD-ROM.

The disc, based on a book by Vickie Iovine (mother of four), takes nervous mummies through the ins and outs of pregnancy by calling in the girls to dish out advice. You'll find fashion faux pas, tips on preparing for baby and keeping momma sane, and, of course, enough sex talk to

make junior high school boys blush.

Gab fests are broken up with cheesy games such as Gene Genie, in which a slot machine figures out what Junior might look like based on the parents' traits, and Girlfriend in Distress, in which dads must answer questions to rescue the damsel in the

castle. (Sample question: I do not see my pregnant wife's moodiness as an excuse to start a fight. True or false?)

But, the banal games and powder puff interface aside, this disc holds enough straightforward, homey tips on getting through those long nine months to make the perfect gift for any mother-to-be.

The Last Words:

Mark: This book-to-CD adaptation certainly projects the proper cute-and-supportive aura, but after running into a series of programming errors, the effect is undermined.

Judy: Not craving anything weird, but if I were, I might just want to have these girlfriends around.

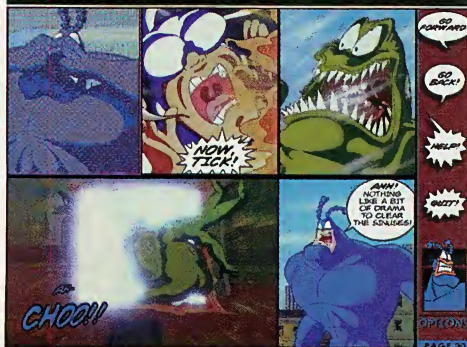
Joe: Yeah, it's got all the right things—humor, tips, and maneuverability—but it just seems a little too campy.



GIRLFRIEND'S BABYTALK DELIVERS a neat bundle of advice to about-to-be-moms.

The Tick vs. The Uncommon Cold

PUBLISHER: Inverse Ink
CONTACT: 800-771-1344,
<http://www.inverse.com>
PRICE: \$9.99 (street)
REQUIREMENTS: 2X CD-ROM,
 System 7.0 or later, 68020 or faster, 8MB of RAM



LET THIS CHEAP TICK disc burrow into your system.

OK, the Fox network's cartoon crime fighter, the Tick, takes to the even smaller screen in this CD-ROM version of the Saturday morning show that pits the superhero against a tough cold as well as a snotty alien bent on (you guessed it), world domination.

The Tick's hilarious phlegm-soaked battle is spewed over 100 frames in 20 interactive screens. Although every panel is a talkie, some also show QuickTime movies or simple animations. Click through each panel manually, or set the computer to run through the comic book on autopilot.

The content is unbeatable, especially for the price, but the low-budget production invites a few strange quirks. It's unclear why programmers chose to make animated movies out of certain frames and not others.

It's also hard to distinguish when a video clip is finished or only resting.

Passive parties may want to tuck away their cash and catch the cartoon on Comedy Central while Inverse Ink irons these rough spots. True Tick fans, however, won't want to wait.

The Last Words:

Mark: This time around I'd say that only serious Tick buffs need this, even at its bargain price.

Judy: Kids, grown-ups, grandma, the dog—everyone should see this. I'm both a comic book and a Tick neophyte. What have I been missing?

Joe: I probably wouldn't buy this if it were Superman or anything, because I don't get into those kinds of comics. But for the Tick, I'd plunk down a couple bucks.

Eyewitness Virtual Reality: Cats

PUBLISHER: DK Multimedia

CONTACT: 800-356-6575,

<http://www.dk.com>

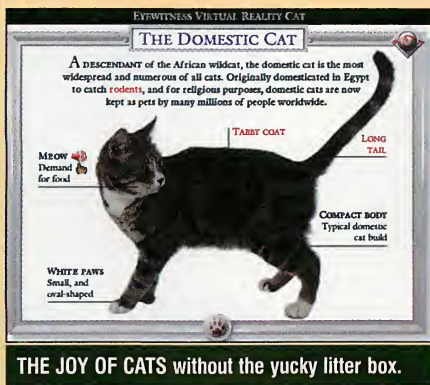
PRICE: \$29.95 (street)

REQUIREMENTS: 2X CD-ROM,

System 7.0 or later, 68040 or faster, 8MB of RAM



3D museum with about 100 exhibits detailing kitty history. Visit cougars, lions, tigers, jaguars, and, of course, domestic cats. If you are confused about where to go, take one of four short tours, which give you a point to jump off and explore.



Like most of DK Multimedia's ventures, this disc brags a clean interface and loads of information. However, *unlike* most DK ventures, the title falls woefully short on videos. Luckily, that shortcoming doesn't dampen too much the effect of the disc, which reaps accolades that might draw even (gasp)...dog lovers.

The Last Words:

Mark: The museum simulation is great, and the design, interface, selection of material, and depth of content are all totally top-notch.

Judy: Good room-to-room movement; could use more QuickTime movies and better navigation, but still purringly informative.

Joe: Even if it gets a little boring, you can flip over to the "cat sounds" section, click on a roaring lion, and freak your cats out for a while.

Picasso: the Man, his Works, the Legend

PUBLISHER: Grolier Interactive

CONTACT: 203-797-3530,

<http://www.grolier.com>

PRICE: \$39.99 (street)

REQUIREMENTS: 2X CD-ROM,

System 7.1 or later, 68030 or faster, 5MB of RAM



textures, and colors. Grolier also tosses in some hip mood music, and video footage to keep less diehard fans from dozing.

Unfortunately, the title's navigation is also built around artistic designs, a definite head-shaker until you learn the language.

Still, this CD packs a colorful palette of history and analysis on the great artist by sticking to what's important: Picasso's life and work. Through that focus, the disc earns a solid reputation that compensates for the silly navigation. Solid, but not exceptional.



GROLIER PAINTS a pretty picture of Pablo and his works.

The Last Words:

Mark: Nothing truly stunning or unexpected, but a quality job nonetheless.

Judy: The art and story are so fascinating that they make up for getting lost. Picasso's work—the span and variety—is thoroughly covered. Bravo!

Joe: OK, I'll be the one to sink to a junior high level. The disc definitely has pictures of naked people, but, strangely enough, you find yourself considering the artistic implications of the paintings. That darn Picasso can ruin anything.

Klondike Gold

PUBLISHER: DNA Multimedia and

Hyperborean Productions

CONTACT: 800-661-0500

PRICE: \$64.95 (SRP)

REQUIREMENTS: 2X CD-ROM, System 7.0 or later,

68040 or faster, 5MB of RAM



Pop in the CD and its a lame history lesson on the Yukon. It's so lame there's not even a map to show exactly where the Yukon is located. Instead, it offers pictures and many words to "interactively" read off the screen.

A toasty bit includes a poem about a miner who got really cold and asked his buddy to cremate him upon his death. He dies. He gets cremated and winds up warm...well, sort of.



SIFT PAST THIS GOLD-DIGGING DISC—It doesn't pan out, despite slick marketing.

The Last Words:

Mark: The CD-ROM's archival movies, maps, photos, and audio clips would be nice if they weren't all so relentlessly dull.

Judy: No question about its historical value, but interactive? Marketing the disc with a pan and dirt/gold is clever, but the dust from the box almost clogged my Mac.

Joe: Disc makers employ the same kind of logic that drove men to abandon their families and ruin their lives in search of gold in the first place. Don't become another statistic.

Not that there's anything wrong with using cheap gimmicks to make a quick buck—this is America—but this disc crosses the line by promising a gold rush and delivering a history lesson.

Here's the scam. Disc makers apparently thought they couldn't sell just a history of the Yukon gold rush, so they included a pan, some dirt, some flecks of gold (so they say), and a booklet on how to mine for gold by mucking up your bathtub. All for the low price of \$65.



Kidz Stuff

reviews

Brisbane Elementary School Mac addicts get hands-on with the latest kids' software.

How to Catch a Wild Asparagus-Snatching Snagglysnort

PUBLISHER: Diamar Interactive

CONTACT: 800-234-2627, <http://www.diamar.com>

PRICE: \$30 (street)

REQUIREMENTS: 2X CD-ROM, System 7.1 or later, 25MHz 68030 or faster, 8MB of RAM, printer



Renowned monsterologist Colonel Picklewart teaches kids the ins and outs of tracking a wild asparagus-snatching snagglysnort in this CD-ROM activity book that seems to be more paper based than pixel oriented. Unlike most other hands-on CD-ROMs, Diamar's disc supplies only off-screen activities requiring printed instructions and house-

hold supplies—the rest of the disc is merely a well-illustrated story-book slide show. The disc makers could have at least included a few educational games or hidden clickables for the kids who actually want to use their computers.

GOOD FOR GRADES: 1 to 5

LIKES: "You can make things in this program like a passport card and some other stuff." ■ Daniel

DISLIKES: "All the crazy words would get little kids mixed up. There are not games, just pictures of things." ■ Hilary

"I did not like the fact that it did not have educational games."

■ Alfonso

SOUND ADVICE: "I would cut down on the activities and concentrate on making the game better."

■ Eric

FINAL REPORT: Off-screen-only activities are a bit of a waste.



SNAGGLY HOW-TO is only so-so.

Meet the players...



HOLLY MILLER, Age 10, Grade 5

EXPERTISE: Soccer

PICK OF THE MONTH: Amazon Trail II



MAX OLIVA, Age 10, Grade 5

EXPERTISE: Sports

PICK OF THE MONTH: The Time Warp of Dr. Brain



MICHAEL KOWNTZ, Age 10, Grade 5

EXPERTISE: Bowling

PICK OF THE MONTH: Digital Lab



DANIEL LAM, Age 10, Grade 5

EXPERTISE: Math

PICK OF THE MONTH: The Time Warp of Dr. Brain



BRIAN SCHROEDER, Age 10, Grade 5

EXPERTISE: Basketball

PICK OF THE MONTH: Digital Lab



HILARY WALDO, Age 10, Grade 5

EXPERTISE: Soccer

PICK OF THE MONTH: Digital Lab



ALFONSO PICAZO, Age 10, Grade 5

EXPERTISE: Sports

PICK OF THE MONTH: Amazon Trail II



ERIC GRIFFIN, Age 10, Grade 5

EXPERTISE: Sports

PICK OF THE MONTH: The Time Warp of Dr. Brain

Dinosaur Explorers

PUBLISHER: Memorex Software

CONTACT: 310-403-0039, <http://www.mrxsoftware.com>

PRICE: \$34.99 (SRP)

REQUIREMENTS: 2X CD-ROM, System 7.0 or later, 68030 or faster, 8MB of RAM



Dinosaur Explorers digs up the dirt on our prehistoric predecessors and hands over the goods in the form of animated drawings, games, "prehysterical" videos, and hundreds of corny dino jokes. The animated intros to each dinosaur supply only minimal information, but it's fun and easy to remember. Tongue-twisting dino names are helpfully spelled out and pronounced. Games such as Dino Scramble, Dino Match Game, and Shuffle-O-Saurus may be a little too simple for the old-timers, but they beat flashcards at any age for identifying and remembering which large lizard was which.

GOOD FOR GRADES: Preschool to 5

LIKES: "I like the pictures of the different dinosaurs and also the facts it told me, like small dinosaurs can still be ferocious." ■ Brian

"They tell you about dinosaurs in different ways that are fun." ■ Hilary

DISLIKES: "I did not like that all the puzzles you do are so easy." ■ Eric

"The TV is kind of blurry, and it's pretty hard to watch TV in this program." ■ Daniel

SOUND ADVICE: "I think that there should be more games because most of the games are not the best." ■ Holly

FINAL REPORT: Dino disc proves more educational than Jurassic Park, less frightening than Barney.



DEN OF DINO GOODIES gets all the artifacts straight.



Ozzie's Science

PUBLISHER: Digital Impact

CONTACT: 800-775-4232, <http://www.digitalimpact.com>

PRICE: \$29.95 (street)

REQUIREMENTS: 2X CD-ROM, System 7.0 or later, 68030 or faster, 8MB of RAM



EVOLUTIONARY DISC leaps to life on-screen.

Ozzie, your good-natured guide, and four of his friends take you on a scientific search-and-discover mission that has you playing educational games onscreen and making magic potions off. Explore any of the four worlds hosted by Ozzie's pals to find a selection of puzzles such as Silly Sorter and Fix-It. You'll also run across about nine projects per screen that take advantage of materials most folks have around the house (Styrofoam balls, modeling clay, boiled beet juice) to create scientific wonders such as tornadoes, eclipses, submarines, and rainbows. Oh my.

GOOD FOR GRADES: K to 4

LIKES: "I liked that you can go do any subject you want."

■ Alfonso

"The songs, the games, and the voices are cool and funny." ■ Holly

"The games were fun and you could learn a lot." ■ Michael

DISLIKES: "It does not let you do much. It just shows you what to do. Little kids get bored just clicking." ■ Hilary

"I disliked that every place you went it was the same games except with that subject." ■ Eric

SOUND ADVICE: "Make some place that you could experiment on the computer." ■ Daniel

FINAL REPORT: Ozzie's science seems more fun off-screen than on.

Digital Lab

PUBLISHER: Philips Media

CONTACT: 800-883-3767, <http://www.philipsmedia.com>

PRICE: \$39.95 (SRP)

REQUIREMENTS: 2X CD-ROM, System 7.0.1 or later, 25MHz 68040 or faster, 8MB of RAM, 9-volt battery



Digital doings cease to be a mystery as kids go down to the wire learning why electronics work in Philips Media's hands-on Digital Lab kit. Kids get comfortable with components by setting up a workbench using a prepackaged set of springs, wires, resistors, capacitors, and chips. Once they've got the basics in place, young engineers can use the CD-ROM to guide them through 12 different projects such as Light Chaser, Sound Counter, and Random Number Generator that bring the board to life. The disc also includes some obligatory games, as well as lively onscreen introductions to the kit's components, a guide to what makes various gadgets work, and a fast-paced slide show explaining digital basics such as electricity, computer chips, and how computers think.

GOOD FOR GRADES: 3 and up

LIKES: "I liked this program because I learned about the Piezo Transducer, the 4011 NAND gate, the push button, capacitors, resistors, the 4029 binary counter, the 4028 siren light, orderly blinking lights, and facts." ■ Brian

"It is not just a computer game, it is hands-on learning." ■ Hilary

Amazon Trail II

PUBLISHER: The Learning Company

CONTACT: 800-227-5609, <http://www.learningco.com>

PRICE: \$35 (street)

REQUIREMENTS: 2X CD-ROM, System 7.1 or later, 68040 or faster, 8MB of RAM



Load up the canoe and sharpen your fishing spears, you're about to set off for a 3D journey down the Amazon. Thanks to a strange incident at the Museum of Ancient Art, you suddenly find yourself stranded in a town called Belém. Here you first must pick a guide and buy your supplies before continuing on a mysterious mission to locate a hidden fortress somewhere in the Amazon rain forest. Along the way, you'll trek through a flooded forest, a marsh, a forest floor and a canopy. You photograph and identify the wildlife as well as interact with the native peoples to advance toward your goal. Three levels of gameplay make for an endless educational adventure.

GOOD FOR GRADES: 4 and up

LIKES: "I liked fishing because I finally found out how to do it." ■ Holly

"I liked the graphics a lot and the good real view of people instead of cartoon people." ■ Brian

"I liked the whole program." ■ Alfonso

DISLIKES: "The signs were hard to see on the side." ■ Max

"I didn't like that when the spear was right in the fish, you didn't

catch it." ■ Eric

SOUND ADVICE:

"Make more guides in this program and make it easier to catch a fish when you go fishing."

■ Daniel

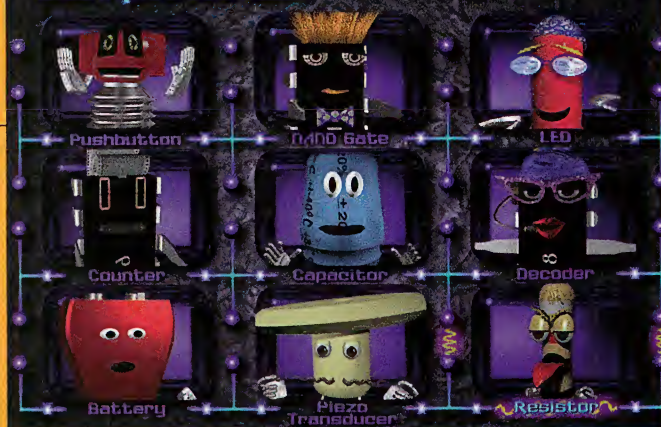
FINAL REPORT:

Exotic, ecological journey keeps kids fighting for the survival of the smartest.



GRAB A GUIDE and drift toward an Amazonian adventure.

Meet The Components



DYNAMITE DIGITAL KIT WIRES KIDS for an electric hands-on experience.

DISLIKES: "It's hard to set up the board, this program does not come with a battery, and the fortuneteller game doesn't say the truth." ■ Daniel

"Your hands really hurt after setup, but I liked everything else" ■ Hilary

SOUND ADVICE: "When it told you to connect the 64 and 65, I would want it to say the color of the wire instead of showing it." ■ Eric

FINAL REPORT: Lights up your life with just a few well-placed LEDs.

Iz and Auggie Escape From Dimension Q

PUBLISHER: Headbone Interactive

CONTACT: 800-267-4709, <http://www.headbone.com>

PRICE: \$19.95 (street)

REQUIREMENTS: 2X CD-ROM; System 7 or later, 25MHz 68040 or faster, 8MB of RAM



Iz and Auggie bomb their big audition with Screech records, and it smells like foul play is in the air. As soon as the duo is dragged offstage, they're grabbed by two big dudes from "the Agency" and dropped in a recycling dumpster of orange gurgling goo that sends them right into Dimension Q to rescue a few lost agents. You have to help Iz (short for Isabelle) and her robot, Auggie, rescue the missing agents, find the XT-10 probe, and get back their music. Warning: Some of the puzzles are harder than the month-old gum wad stuck to the bottom of your desk.

GOOD FOR GRADES: 6 and up

LIKES: "I liked that the voices were kind of screechy—and there's nothing much else, because I couldn't play the game." ■ Eric

DISLIKES: "No one could figure out how to do the password, and the clues were not much help." ■ Holly

"I didn't like this game that much, because I really didn't get the point." ■ Brian

SOUND ADVICE: "I would take out the password so people can play." ■ Daniel

FINAL REPORT: The opening code was too tough for our young sleuths to crack.



KIDS LITERALLY couldn't get into the escape.

The Time Warp of Dr. Brain

PUBLISHER: Sierra On-Line

CONTACT: 800-757-7707, <http://www.sierra.com>

PRICE: \$39.95 (street)

REQUIREMENTS: 2X CD-ROM, 68040 or faster, 8MB of RAM



Dr. Brain slips up while testing his latest theory, the Space-Time Discontinuum, and sends himself on a one-way trip back in time. To help the wisecracking doctor find his way back, you have to solve more than 600 brain-busting puzzles in 10 different 3D worlds. As your survival instincts kick in, you'll strive to be the dominant amoeba in the primordial soup and sign your way to success against a gifted monkey in a frantic word challenge. Three levels of game difficulty and random puzzle regeneration will have you racking your brain every time you play.

GOOD FOR GRADES: 5 to adult

LIKES: "The games are really cool and fun. I like playing Lizards and Eggs." ■ Holly

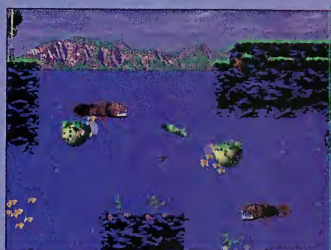
"The games had great graphics. They were also funny." ■ Michael

DISLIKES: "There are some complicated games that were hard to figure out." ■ Max

"I didn't like that the meaning of the game is a scientist who kills aliens. What a wreck." ■ Brian

SOUND ADVICE: "Give some educational questions, and when you get enough points, then you can play." ■ Hilary

FINAL REPORT: It's not brain surgery, but it's almost as hard.



BRAINY, TIME-WARP games equal 10 worlds of head-puzzling fun.

Drawing Discoveries

PUBLISHER: Brainstorm

CONTACT: 888-427-2467, <http://www.brainstormfun.com>

PRICE: \$29.95 (street)

REQUIREMENTS: 2X CD-ROM, System 7.1 or later, 68040 or faster, 10MB of RAM



Art is the draw in this CD-ROM masterpiece that will have kids sketching giraffes and spouting Swahili as they gather facts on the geography and people of Africa. Fifteen half-hour, step-by-step drawing lessons show young artists how to draw animals and people from three different regions of Africa. Drawing lessons are sweetened with informative QuickTime movies, a sprinkling of Swahili, and a brief guide to drawing styles and terms. Kids color in their pictures using a 24-color paint palette or print them out in black and white for coloring off-screen.

GOOD FOR GRADES: 3 and up

LIKES: "I liked the whole program. The best part is that it teaches you how to draw." ■ Alfonso

"The giraffe does not tell you what to do; it suggests what you could do." ■ Hilary

"I liked the way it taught you how to draw. The animals you draw, it tells you where they're from." ■ Michael

DISLIKES: "I didn't like that there weren't many animals to draw from one area." ■ Eric

"I did not dislike anything. I thought everything was cool." ■ Holly

SOUND ADVICE: "Give the color part a bucket to color the whole part." ■ Daniel

FINAL REPORT: The box office draw of the season.



MONKEY SEE, monkey do, monkey draw.

What the Adults Thought

When the prerelease version of Headbone Interactive's latest smart-alecky kids' software made its way to our offices, Dan, our reviews editor, was already begging for a sneak peek. So, we let him borrow Iz and Auggie for the weekend.

Monday morning the guy wouldn't shut up about it. Not only are the puzzles challenging but Iz and Auggie also have that comedic edge that attracts adults and kids, he says. Dan is still pleading for the final version, and any and all Iz and Auggie propaganda that gets sent our way.

Based on his enthusiastic review, we thought the kids would rate the final disc a freakin' awesome. But, this bright group of 10-year-olds couldn't make it past the title's first real puzzle—a code they had to break by reorganizing parts of a musical message to its original state. Since the kids couldn't get past this puzzle, they couldn't get to the rest of the game.

What a shame. The puzzles are indeed difficult, but not impossible with the help of an adult. Even better, the characters and dialogue are hip and humorous—a nice break from the smarmy pap that perpetuates this young-loving industry. Despite the kids' rock-bottom rating of Headbone's first title to feature a female (applause, applause), we recommend that parents check it out, if not to play with their kids, then to enjoy without them. —Nikki Echler

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**Now with 604e
up to 200MHz!**



Mac II Series, LCIII & SE/30

MicroMac Carrera040 as low as \$249!

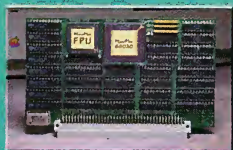


The Carrera040 accelerator features a 68040 processor running at 66/33MHz or 80/40MHz with optional FPU and 128KB Cache card for the Macintosh IIci, IIsi,

IIcx or IIfx. With the Carrera040 you notice a speed difference right away: instant screen redraws in PageMaker, FreeHand and QuarkXPress; speedy recalculations in Excel; blazing special effects with Photoshop and increased computing power for demanding Web tasks. (Adapter boards included at no extra cost.)

**Cache
Card Now \$49!**

50MHz 68030 DiiMO 030 as low as \$199!



The DiiMO 030 accelerator offers fast 68030 50MHz power with 64KB cache, Zero-wait state technology (for increased processor performance) and

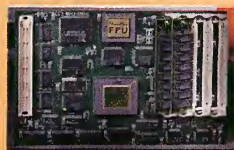
optional FPU to give you the performance level nearly equivalent to a 25MHz 68040 based Macintosh such as the Quadra 610. Compatible with the Macintosh II, IIci (IIcx, IIfi, Performa 600), IIsi, IIcx, IIfx, LCIII and SE/30, the DiiMO 030 is ideally suited for word processing, database management, multimedia and the Internet. (Adapter boards included at no extra cost.)

LC, LCII & Performa 400-430

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With the ThunderCache accelerator you combine the pure speed of a 68030 CPU running at 32MHz with an ultra-fast 32KB cache memory and an optional 32MHz FPU for a performance increase up to 220% on your LC, LCII, Performa 400/405/410/430 or Color Classic.

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**Order
Now!**

Quadra 700 & 900

100/50MHz 68040 SpeedDoubl040 as low as \$299!



The SpeedDoubl040 is the ideal accelerator for speeding up your Quadra 700 or 900. It combines the features of a 68040 processor running at 100/50MHz,

128KB onboard cache, Zero-wait state technology (for added CPU performance) and optional FPU to boost your Quadra up to 200% its original speed. Take advantage of extra performance and versatility for all your processor hungry applications and Internet-savvy programs.

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MicroMac Performer as low as \$49!



MicroMac's Performer and PerformerPro accelerator line gives you the performance and speed you need to efficiently run applications and programs by upgrading

your Plus, SE or Classic to a 68030 processor, the same processor that runs the Macintosh II series of computers. The Performer features a 16MHz 68030 with optional FPU and offers a performance gain of up to 300%. The PerformerPro features a 32MHz 68030, 64KB cache and optional FPU for a performance gain of up to 600%.

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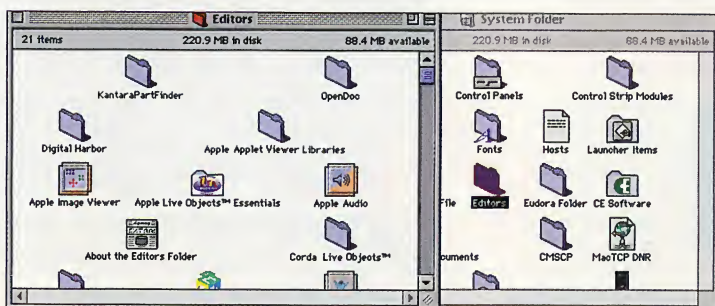


how to work with OpenDoc

Open your heart (and your Mac) to OpenDoc and the world can be yours.

Hot Tip:

Make an alias of the Stationery folder and place it in the Apple Menu folder in the System Folder. When you want to start a new document, you'll be able to "tear off" a new piece of Stationery easily, without having to dig through a cluttered desktop.

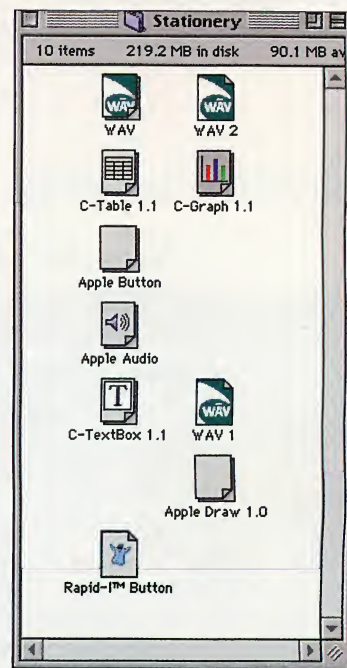


EDITORS LET YOU, WELL, EDIT. OpenDoc places an Editors folder in your System folder. Editors let you see, as well as change, the content in a document.

piece of Stationery. When you want to do something to your page, you drag the relevant Live Object to it—whether it be a drawing part or a page layout part or even a Web browser—and do the work. Once you get the hang of it, you'll wonder why you ever worked any other way.

Before you start creating, you'll need to get OpenDoc (currently at version 1.1) from either the OpenDoc Web site <<http://www.apple.opendoc.com>> or the March MacAddict disc. (It is also included with System 7.6.) The OpenDoc Installer will place a folder titled Editors in the System Folder (where it needs to stay) and a Stationery folder (where all the Stationery resides) on your hard drive. OpenDoc will look for Stationery in the Stationery folder, so although you may be tempted to move this folder around, for now leave it where it is.

IMPORTANT: Install OpenDoc first, before any parts, otherwise these parts may create their own Stationery folders, different from the (main) one OpenDoc itself needs.



YOU'LL SEE THIS FOLDER OFTEN. To work with a part, you'll need to drag it from this folder onto your document.

Here's the software and files you'll need for this project other than OpenDoc:

■ A *container* (a part that can have other parts embedded in it). In this case, the container is Digital Harbor's Way, a word processor that includes Corda Technologies' C-TextBox. You can get a demo (and order a full copy) of Way at <<http://www.dharbor.com>>.

■ Hutchings Software's Rapid-I Button, which allows you to make clickable buttons. Download a demo or order the full product at <<http://www.hutchings-software.com>>.

■ Apple's OpenDoc Essentials Kit, which contains these OpenDoc viewers (they allow you to read OpenDoc parts): Apple 3DMF Viewer, Apple Audio, Apple Button, Apple Draw, and Apple Image Viewer. This package is included in System 7.6 or can be downloaded from Apple's OpenDoc Web site. You also should download the Apple QuickTime Viewer from the Web site.

■ Cyberdog, Apple's OpenDoc Web browser. You can find this on The Disc or at <<http://cyberdog.apple.com>>.

■ Content. You'll need a QuickTime movie, a still from the movie (in MoviePlayer, go to File>Export and choose "Movie to Picture"), and a sound file, saved in AIFF or WAV format. (We used Matthew Lindberg's "Valentine," the second runner up in our QuickTime movie contest (Dec/96, p50).)

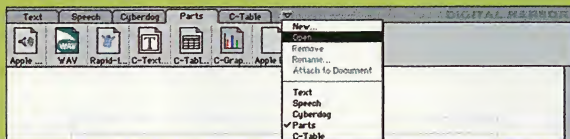
Apple's Web site is a good place to find parts, but timely updates are best found at <<http://www.partbank.com>> and <<http://www.cc.gatech.edu/people/home/mpinkert/opendoc/Parts.html>>. Fortunately, Live Objects are cheap and easy to download. To install them, simply place the Editor and Stationery (each Live Object should come with both) in their respective folders. Voilà! You're ready to work with the new part, and you didn't even have to restart your Mac.



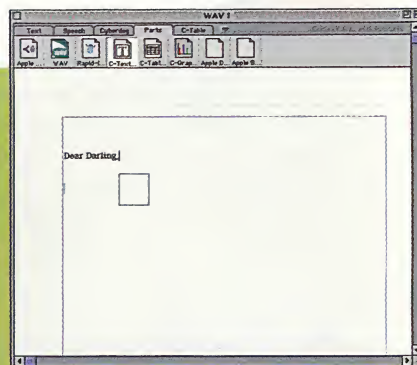
Find the tools you need on The Disc or download them from the Web.

STEP 1 Make and Address the Card

Double-click a piece of Stationery from Wav. That will give you a blank page with a custom row of menus and a toolbar across the top of the window. You can begin typing at the insertion point (it looks like a blinking line) to address the card. To add a bit of style to the "Dear" box, drag C-TextBox (which, unlike Wav, specializes in text boxes for sidebars and titles) into the document from the Stationery folder (it will turn into an empty square). Alternately, you can click on the little triangle on Wav's toolbar and select your Stationery folder—all your parts will be displayed in Wav's parts dock, and you can drag them onto your document from there.



IF YOU DON'T WANT TO DRAG PARTS IN, then you can access them from a menu or a parts dock (the icons in the tabbed header).

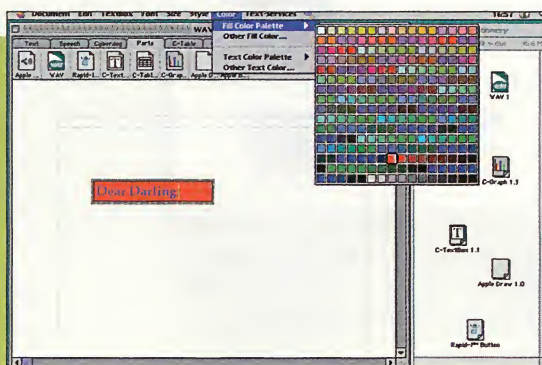


HERE WE'VE TYPED IN TEXT and dragged C-Textbox onto the document.

how to

STEP 2 Jazz Up the Greeting

Once you drag C-TextBox onto the page, you'll see a high-lighted area. Click *within* the part's box to get an outline of the area with resizing handles, similar to those in Adobe Photoshop. Use the resizing handles to change the size and shape of the box. To drag the area to a new location in the document, move the cursor into the area, wait until it changes to a hand icon, and then drag the area. Now drag the text that you typed in Step 1 into the new box. Click on the border of the C-TextBox box to gain access to the C-TextBox specific menu. Note how the options in the menu bar change; this may be confusing at first, but it's no different from what happens when you switch between "regular" applications. You can change the style and font of the text, and the fill color of the text box, to something more jazzy.



DRAG YOUR TEXT into C-Textbox, click on the box's border to get a new menu, and start adding pizzazz.

Margin Note:

Accessing part-specific menus can be tricky because the borders often are only about one pixel wide. Clicking within the part's box often, but not always, allows you to edit content. To resize, you need to find that sweet spot on the border. Patience, my friend.

STEP 3 Add a QuickTime Movie

To set up that "special" QuickTime movie, first capture a frame of the movie in PICT format (MoviePlayer—included with System software—can do this). Save this somewhere convenient. Drag the Rapid-I Button part onto the page to create a blank button and drag it anywhere on the document. (To edit a Rapid-I button, you need to Option-click on it). You can either drag your PICT onto the button or Import the graphic from the Label menu. You may need to resize the button. You can customize the text on the button also through the Label menu, and you can play with the button's appearance (3D or not 3D, etc.) through, surprisingly, the Appearance menu.



HERE'S A PLAIN OLD BUTTON PART before it has been modified or linked to a movie.

STEP 4 Make the Button Do Something

Once you've got the look you like, go to the Actions menu, and set what you want the button to do when clicked. Here, we have a QuickTime file all ready to go, so choose "Link to File" and Rapid-I will give you a standard Open box. Select your movie file, click on the button. Presto! Interactivity. (Remember, though, the movie doesn't really reside within the Wav document, only a reference to the file does; it's like an alias and is similarly location-dependent. This method of linking also works for sounds and Internet addresses.)

WHEN YOU ARE FINISHED dinking around with the button's appearance, go to the Actions menu and pick what you want the button to do—in this case, we want it to play a QuickTime movie when clicked.

Action
Link to CyberItem...
Link to File...
✓ Link to Script...
Link to Sound...
Link to Default Notebook
Link to Connect Dialog
Link to Cyberdog Preferences
Link to Log
✓ Shared Action
Off Action
Remove Shared Action
Recompile Script
Report Errors
Display Results
Run Script ⌘G

STEP 5 Add a Sound

To include a song, repeat the same steps for making a button. Put your own drawing on the button by dragging into the document the Apple Draw part. This will give you a draw box (the default has an ugly grid which you can get rid of with the "Hide Graphics Grid" option in the Options menu). Clicking on the box's border will call up a palette of basic drawing tools. Once you've made a note, select all, Cut or Copy it, Option-click the button, and Paste. You'll then need to delete the original draw box. Now you can edit the text and appearance as with the other button. To have your musical clip play when the button is clicked, go to the Actions

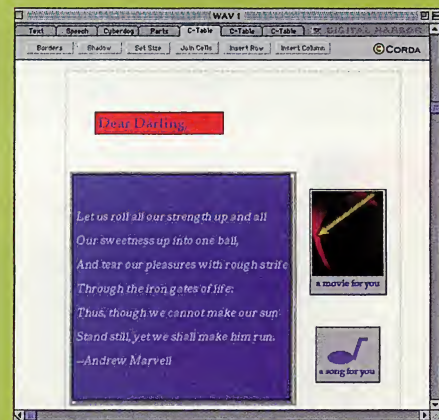


THE STEPS FOR ADDING a sound are similar to those for adding a QuickTime movie. Here we've drawn a graphic to put on our button using the AppleDraw part.

menu, select "Link to File," and choose your licks, you crazy cat. Compatible sound formats include Snd, AIFF, uLAW, and WAV.

STEP 6 Add a Love Poem

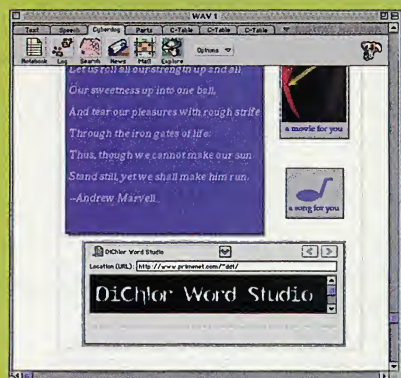
What would a love note be without a poem? As in Step 3, you can set up a C-TextBox box, color it, and manipulate the text as you wish. You can also add a drop shadow with the "Shadow..." option in the Table menu. Quick tip: You should look for a poem particularly appropriate for your love. No one appreciates recycled sentiment.



C-TEXTBOX LETS YOU DO MORE than just create color backgrounds for text. We'll add a drop shadow to the box containing our love poem.

STEP 7 Add a Web Link

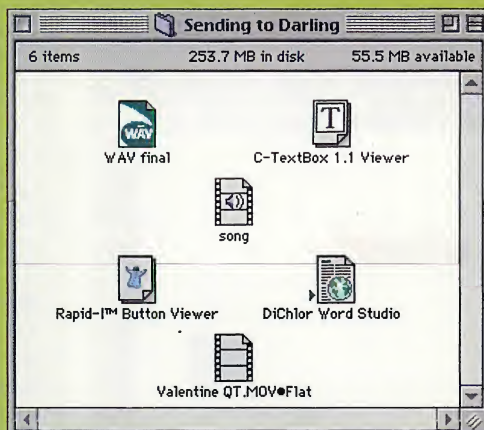
For a truly interactive touch, embed a Cyberdog browser window into your love note. Simply drag a Cyberdog part onto your Wav document, and a real, live Cyberdog browser will appear, which you can resize and reposition as you would any other part. To link this browser to a particular site, just type in the desired URL (why not your home page?) into the Location window. If your love holds onto your card, you can update the site and send new messages as you dream them up.



ADD A LIVE LINK TO A WEB PAGE and you'll be able to send updated messages to your love.

STEP 8 Send the Card

Sending the completed card, and ensuring that your love can see all of its components, isn't as easy as sending a text file. Without System 7.6 or an OpenDoc-equipped previous System, your inamorata won't be able to open your missive. Even with OpenDoc, the right viewers need to be included with the Wav document to avoid the OpenDoc equivalent of Netscape Navigator's broken plug-in icon. The surest method is to send the viewers with the document (or demo versions of the editors—available at the relevant companies' Web sites, or on The Disc; these turn into viewers after 30 days). There's no need to send the Stationery, too, unless you want to give your heartthrob the ability to edit your work (now there's true love). You'll also have to send the linked multimedia elements, such as the QuickTime movie and sound file. The linked elements should remain in the same folder relative to the document; the QuickTime movie you've



YOU MUST SEND THE CORRECT ELEMENTS to your missive's recipient or all of your work is for naught.

used in the document is not really embedded there but only referred to, as an alias refers to a file. If, say, you e-mail the document and movie separately, and they are placed in far-flung corners of a hard drive, there's no way for them to find each other again. As for the viewers, however, as long as they're on the same system, OpenDoc will find them. Therefore, you won't need to send installation instructions along with your love tome.
—D. D. Turner

TOP 10 WAYS

TO KNOW
YOU'RE A

Mac Addict

10. Your 486 works great—as a flower press

7. You can't resist the urge to use "Command Y" to eject your Pop-Tarts from the toaster

3. You paid \$150 for an old Homestead High School yearbook picturing Stephen Wozniak

9. You constantly double-click the bar of soap in the shower

5. You read "Inside Macintosh" to your three-year old Mac whiz instead of Dr. Seuss

2. You are always telling people you can quit using your Mac anytime you want to...

8. You talk in a wild, animated manner about new "extensions" and "peripherals"

6. You wish this was a "Top Five" list so you could get back to your Mac sooner

4. You turn on the TV and are concerned when you don't see a smiling icon



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how to speed Web access

A little bit here, a little bit there: a hodgepodge of tips, hints, and other tricks.

A few bits and pieces of Web authoring news, tips, and advice have accumulated over the months, so let's take a break from formal lessons and clear the professor's desk. You'll find tips and hints for speeding access to your Web

page, uploading new pages, letting visitors send files via FTP from your site, and more. You're bound to find something yummy and useful below. Next month we'll get back to giving you yet another in-depth tutorial.

Planning for a Browser

One of the complications of designing a Web site is planning how your pages will look when displayed within the various browsers.

Hot Tip:
Always remember to use the height and width attributes on all graphics.

What looks good in Netscape Navigator may be almost unreadable in Microsoft Internet Explorer—and most Webmasters don't even consider the other browsers. The more you know about which browsers people use to visit your site, the better you can plan your pages.

A recent report that appeared in Robert Seidman's Online Insider (<<http://www.netguidemag.com>>) says that in 1996,

Netscape Navigator held 80 percent of the browser market, Microsoft Internet Explorer held 7 percent, and other, smaller browsers comprised the remaining 13 percent. Looking to the future, the report claimed that Microsoft Internet Explorer will grow from 7 percent in 1996 to 21 percent by 1999, but not at the expense of Netscape Navigator, which still will own 70 percent of the market. Rather, Internet Explorer will eat up most of the other browsers, shrinking their share to 9 percent by 1999.

If the report is accurate, that is.

Putting Low-Resolution Images First

In order to speed your visitors' apparent access to your pages, take advantage of the Navigator-only image attribute LOWSRC, which lets you specify an alternative, low-resolution image, which Navigator loads and displays first. After that image is (quickly) downloaded, Navigator replaces it with the high-resolution image. This is a good replacement for interlaced GIF images, which can be unreadable until

most of the image has downloaded. Here's the format for the tag:

```
<IMG SRC="sophia.gif" LOWSRC="lowres_sophia.jpeg">
```

See how we've pointed to our impressive large graphic with the usual SRC attribute, and the "light" graphic with LOWSRC?

Your LOWSRC image could be simply fewer colors, could be grayscale instead of color, or even could be a really tiny black-and-white bitmap image.

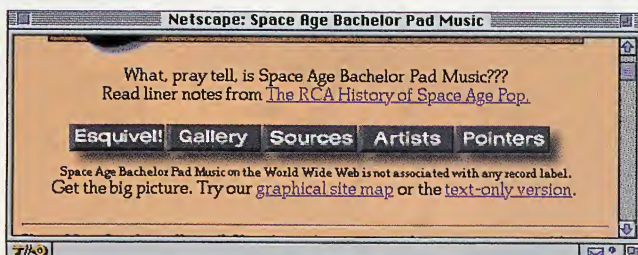
You needn't create high- and low-resolution versions of the same image—your low-res image can be completely different. Why in the world would you want to do that? Imagine a low-resolution navigation image map—perhaps even in black and white, all text on a plain background—that downloads really fast. *Nothing* is more annoying than waiting three minutes for a full-screen site map, for nothing more than the privilege of moving on to a page with actual content.

You even can pair LOWSRC and SRC images for a really cheap animation effect.

The LOWSRC attribute has drawbacks, however. First, only Netscape Navigator 2.0 and later support it (though other browsers simply ignore it). Second, you must keep two copies of images, the full version and a low-resolution alternative.



THIS GRAYSCALE IMAGE is less than one-third the size of its color counterpart. When the full graphic downloads, it magically will turn into a color graphic.



THE ORIGINAL BUTTON BAR takes a while to load because it uses color and anti-aliased text.



THE LOWSRC VERSION of the button bar is less than 2K because it's a straight black-and-white graphic. It's ugly, but hey, it's only temporary.

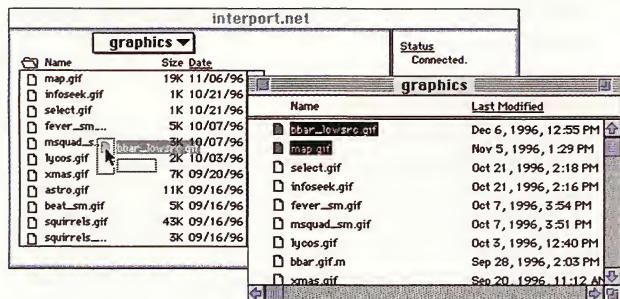


FIND THE SHAREWARE mentioned on The Disc.

Revisited: Uploading

In the December 1996 issue (p102), we discussed how to upload the various HTML and GIF files to your Web host to create your site. Here are a few tips on how to upload new and changed files to an existing site—something you should do regularly to keep visitors coming back.

Just as when you first uploaded files, launch Fetch (Jim Matthews' shareware FTP utility) and find the upload directory on your Web site. This time, though, click on the date column in the Fetch directory window to display the directory's contents by date—it works just like the Finder. Take note of the date of the *newest* file.



DRAG NEW FILES FROM A FINDER WINDOW into the Fetch window in the background.

Now switch to the Finder and open the folder in which you keep the local copies of your HTML files—that is, the folder corresponding to the directory you see in Fetch—and click the date column to

display files by date. Compare the files at the top of the window with those in the Fetch window. All the files on your Mac that are newer than the newest file in the Fetch window have to be uploaded. Select these newer Mac files in the Finder and drag them into the Fetch window. You'll need to repeat the process for each directory, comparing the dates of the files in each directory in the Fetch window with the dates of the files in the Finder.

Unix warning: On Unix servers, new files overwrite identically named existing files, without any warning. If you're working with Unix commands, try the `-i` option to toggle interactive prompting.

Warning: Don't trust the modification dates that the Finder lists for folders. A folder's date may not reflect the date of its newest contents; a folder's date may be *older or newer* than the newest file inside it. The only way to be sure is to open the folder and look at the individual files.

You'll also need to keep track of files you've deleted, which isn't as simple. My crude method: As I remove pages or graphics from the Web site, I drag the local copies of the files into a folder called Delete from ISP. Then when I'm working with Fetch to update my Web site, I look at what's in that Delete folder to determine what to delete from the site. Drop me a line if you have tips on better ways....

It's especially important that you log on to your site with a Web browser and double check all the pages to which you've made changes. It's *really* easy to make little mistakes, such as forgetting a graphic.

Offline Reading

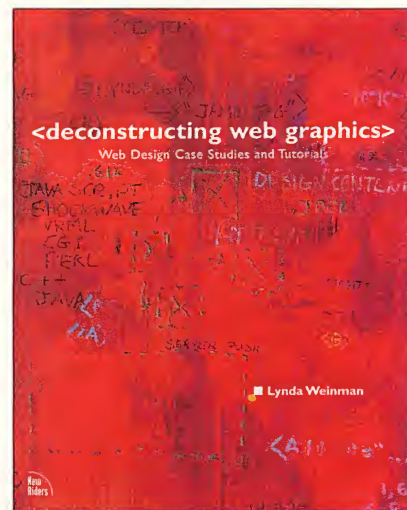
I've read so many HTML and Web books that my optometrist is opening a Joseph O. Holmes wing, but darn it, they just keep coming out with good ones. My current favorite is *Deconstructing Web Graphics* (New Riders, about \$45, ISBN 1-56205-641-7) by Lynda Weinman, who wrote the wonderful *Designing Web Graphics*, a book that taught me almost everything I know on the subject.

Deconstructing Web Graphics has a lot to say about graphics but cuts a much wider swath. Taking a look at 11 top-notch Web sites, including HotWired, typoGRAPHIC, and Internet Underground Music Archive, Weinman digs into the process behind topics such as

low-bandwidth design, Java and Shockwave, frames, photography for the Web, navigation, HTML tricks, and lots more. Although the coverage is more broad than deep, it's remarkably useful to see how various Web technologies and ideas are put into practice in the real world by real people. The book offers lots of tips and pointers to other books and resources. It's also

the first Web-related book that's as attractively designed as the sites that it discusses.

The only serious flaw is that many of the graphics have been shrunk to thumbnail size, making many of them so small as to be unreadable. Otherwise, the book is a gem and should be read by every serious Webmaster.

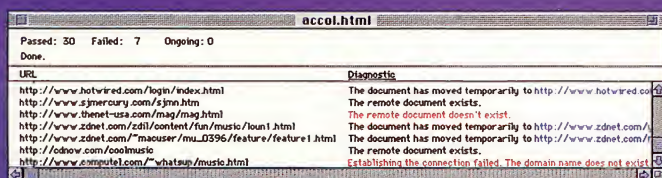


THE BEST, MOST INFORMATIVE BOOK on Web graphics that we've found yet.

Shareware

Alert!

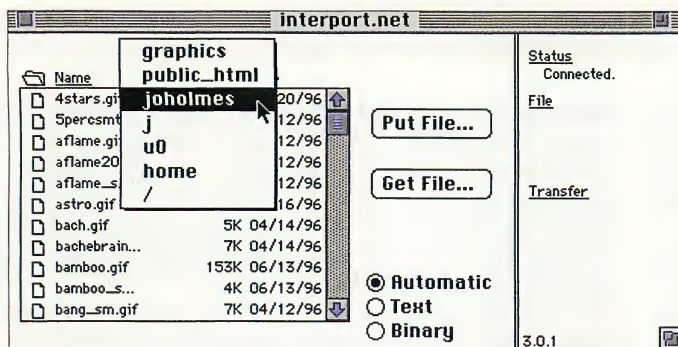
As I write this, Francois Pottier's Big Brother is running in the background examining all the links in my Web site, local and remote (637 and counting) over my PPP connection. This incredibly useful utility tells me that some of my remote links aren't working any more, that some domain names no longer exist, which files are missing, and even which documents have moved (and *where!*). It also checks local links. Big Brother is simply indispensable and easily worth its \$10 shareware fee. No site, large or small, should be without it.



IN A MATTER OF ABOUT A MINUTE, Big Brother told me which remote links were still valid and where to find some of the moved files.

How to Let Visitors Send Files via FTP From Your Site

You'd like to make files available on your Web site for visitors to download? We previously discussed how to make downloadable sounds (Feb/97, p96), and you can do the same thing with just about any file. It's quite simple. Just add the file's URL to an FTP hyperlink statement, in the same way that you create any hyperlink: `<A HREF ftp://ftp.interport.net/~joholmes/file>`. As you can see, an FTP URL begins with "ftp" rather than the more familiar "http".



FROM FETCH'S WINDOW, you can determine the path name (<ftp://interport.net/~joholmes/graphics>) plus the name of the file. Note that it was only by asking the ISP that I could tell that "public_html" wasn't part of the path.

To construct the correct URL, use an FTP application such as Fetch to locate the file on your server. Use the server name you see in Fetch's window title, and the path name that Fetch reveals in its pop-up menu. Your home directory will probably start with a tilde (~).

A visitor's click on the hyperlink will download the file according to the browser's particular method: Netscape Navigator will download the file itself, whereas Microsoft Internet Explorer, if the helper applications are set up, will launch your FTP application to download it.

These instructions will work in most cases, but you *must* test the link. If you run into snags, contact your Internet service provider.

Update: Progressive JPEGs

Readers Luke Pacholski writes to dispute my assertion in a previous column that progressive JPEG images—which act something like interlaced GIF images—can be displayed only by Netscape Navigator. Luke's right. Microsoft Internet Explorer versions 2.0 and later also can display progressive JPEGs. We'll explore the use of interlaced JPEGs in a future installment.

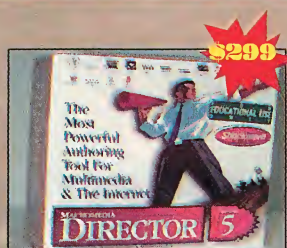
Download the Beta!

It's tough to write about the downloadable beta software available on the Web, because by the time this column hits your mailbox, the beta version has probably become a full commercial product. But you should at least know that beta versions of Adobe PageMill 1.0 and 2.0 (at <http://www.adobe.com>) and Claris Home Page 1.0 and 2.0 (at <http://www.claris.com>) were first available for free download from the Web. And for the most part, they weren't horribly buggy. For the latest info, check the companies' Web sites. Also check the sites of companies that make your favorite products to see if they are distributing beta software. Take care, however, when installing beta software on your Mac. We recommend backing up your system first and, if possible, installing the beta software on a removable cartridge. —Joseph O. Holmes

Student-Teacher-School Discounts!



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Director 5.0



The Black Box 2.5



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MiniCAD 6



LIVE Picture



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Wacom ArtzII 6x8



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ask us

your questions

We answer all of your technical questions, no matter how simple or complex.

Q On my desktop Mac, I can start up from a CD-ROM instead of the internal hard drive by pressing the C key during startup. However, this doesn't work on my new PowerBook 1400. How can I force it to start from a CD?

A This is normal for the PowerBook 1400 as well as many desktop Macs. To start from a CD-ROM that has the appropriate System software, insert the disc into the drive, then hold down Command-Shift-Option-Delete after you turn on the Mac and wait until the Welcome to Macintosh screen appears. This four-fingered salute tells the Mac to bypass the internal hard drive and instead start from the next available SCSI or IDE device, which happens to be the CD-ROM on a PowerBook 1400. Note, however, that on desktop Macs, the internal CD-ROM drive has a SCSI ID of 3, so if you have something with a valid System Folder attached to the SCSI port and it is set to ID 2, your Mac will choose it as the startup device. Otherwise, your Mac will ignore anything at ID 2 and look at the internal CD-ROM drive.

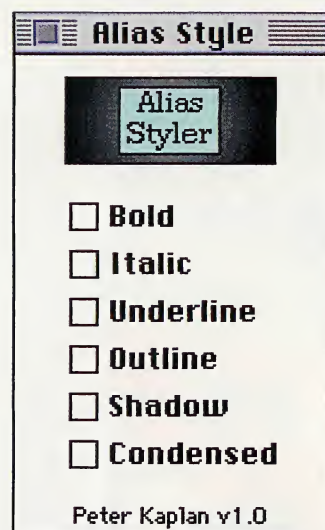
Q Why does the Finder insist on appending the word *alias* to the file names of aliases? I'm not stupid; when I see a file name in italics, I know it's an alias, so I don't need a suffix to tell me. A long time ago I came across instructions for hacking the System or Finder so that when aliases were made they didn't automatically receive the suffix. Can this still be done?

A Rather than hack the System, I prefer to use Rolf Braun's Finder Options or Richard Burgess' Hidden Finder Features, two very similar freeware control panels that enable useful features that Apple added in System 7.5.2 (and later releases) but never implemented. The feature you'll really like is the ability to create aliases

by pressing Control while you drag and drop a file from one location to another. When you release the mouse button, an alias is created with the same name as the original and no *alias* suffix. In a related feature, press Command-R to reveal the original item of an alias.

I'm also partial to another feature: Pressing Command-Delete instantly moves a selection to the Trash. For somewhat snappier performance, toggle the display of zoom rectangles that appear when opening or closing windows. Best of all, stability isn't an issue, because these control panels merely enable features already in the Finder. It's my hope that Apple will sanction these features and provide an official control panel in an upcoming release of the Mac OS.

On a related note, I'm a big fan of Peter Kaplan's freeware control panel Alias Style, which allows you to specify the font style in which aliases appear. Why put up with boring, hard-to-read italics when you can have other, equally hard-to-read font styles?



ALIAS STYLE gives you complete control over the appearance of aliases.



FINDER OPTIONS enables several undocumented features.



FIND THE SHAREWARE mentioned on The Disc.

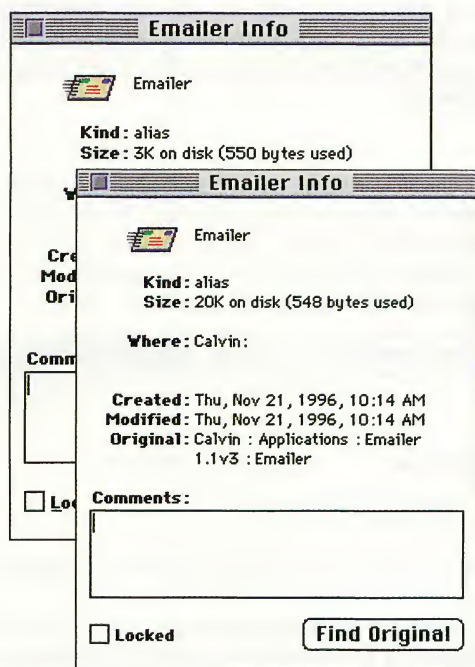
Helping the Mac Cause

As a Mac addict, you owe it to yourself to let vendors know when you are buying their wares so that they will continue to develop Mac products. The trouble is, sales of hybrid packages are typically tallied as Windows sales, even though these discs work under Windows and the Mac OS. As a result, the true Mac software sales figures are under-reported, making the Mac a seemingly less lucrative platform for which to develop new products. To combat this product, always fill out and return registration cards indicating that you purchased the program to run on a Mac. Not only does this help vendors compute true Mac sales figures, but also it ensures that the developers know how to contact you if they ever release updates. If the registration card doesn't specifically ask for this information, write it in.

Q I just upgraded to a Mac with a 1GB hard drive. When I transferred everything from my 150MB hard drive, I noticed a strange thing: Files magically got bigger. For example, an alias on my 150MB drive was only 3K, but it takes up 20K on my 1GB drive. Is something wrong?

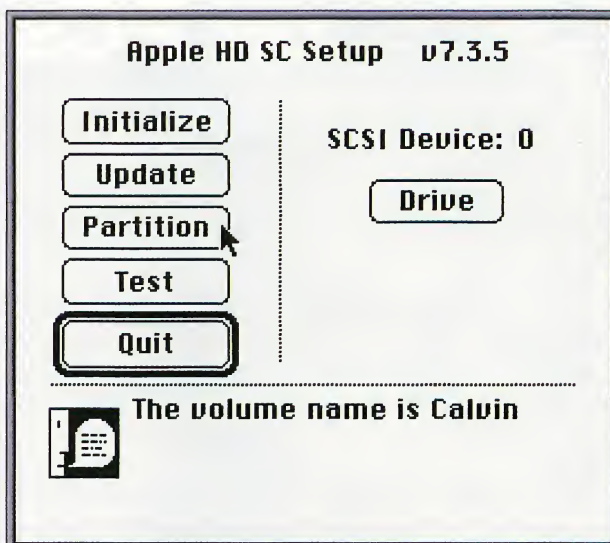
A Nope. Unfortunately, that's the way things work on the Mac. Regardless of a drive's size, it's divided into approximately the same number of invisible blocks when initialized. The larger the drive, the larger these blocks. Large files span multiple blocks, but tiny files such as aliases are often smaller than the blocks themselves. Because a block can contain information about only one file, if a given file doesn't fill a block, the leftover is wasted space.

Select a file on your hard drive and choose Get Info (Command-I) from the File menu. The line marked Size reports two numbers. The first one is how much physical disk space the file consumes (with small files, it's equal to the block size). The second number, in parentheses, is the logical size of the file and is always smaller because it represents the actual number of bytes in the file. The difference between these two numbers is wasted space (when doing the math, don't forget there are 1,024 bytes in a kilobyte). If you have a large number of small files, you end up with a lot of wasted space.



FILES TAKE UP MORE SPACE on larger disks. The difference in file sizes reported in the Get Info window is wasted space that you can reclaim by partitioning your hard drive.

The only way to reclaim this wasted disk space is to partition your hard disk into several smaller volumes, each of which will appear on the Finder's desktop as its own icon. Because smaller volumes mean smaller blocks, you waste less space. To partition a SCSI hard drive, you need a utility such as Apple's HD SC Setup 7.3.5 or later, which comes with the Mac OS. To partition an IDE hard drive, you must buy a third-party utility such as FWB Software's Hard Disk ToolKit (415-463-3500, <<http://www.fwb.com>>) or Casa Blanca Works' Drive 7 (415-461-2227).



RECLAIM THE DISK SPACE wasted by small files in large blocks by partitioning your hard drive with Apple's HD SC Setup.

Q I have several movies in AVI format that I downloaded from my friend's Web site. Is there any way to convert these PC-style movies into QuickTime movies?

A You betcha. From our generous benefactors in Redmond comes Video for Windows, a free Mac utility that converts movie files between QuickTime and AVI formats with any of the following compressors: Microsoft RLE, Microsoft Video 1, or Microsoft Full Frame. A patched version is available that handles movies compressed with the Intel Indeo 3.2 Video CODEC.

Q My Mac won't show long filenames in the Finder or in Open dialog boxes. How do I fix this?

A You can use up to 31 characters to name files, but in the Finder and in the Open dialog box you can only see some of the characters, even with System 7.5. The missing part of the name is denoted with an ellipsis. (Note: this only happens if the characters take up more than a certain amount of space. For example, if you have a file name that consists of 31 character / letters, you'll be able to see the full file name. But if you use *m* instead, you'll only be able to see 17 of the characters.

Mailing List Setup

If you are setting up a mailing list on the Internet, be sure that each posting to the list ends with information about how to subscribe and unsubscribe. By including instructions for subscribing, you'll reap new subscribers when current subscribers forward postings to other people who may be interested in signing up for your mailing list. *The Evangelist* (<<http://www.evangelist.macaddict.com>>), run by Apple Fellow Guy Kawasaki, gains many new subscribers thanks to a simple, three-line blurb at the bottom of each posting. By including instructions for unsubscribing, you'll reduce the number of e-mails you'll receive asking, "How do I get off this freakin' list?"

Running Mac Programs on PCs

In the December 1996 installment of this column, I stated that it's not possible to run Mac programs on a PC. Seeing how I managed to put my head firmly up my ass, readers were quick to congratulate me on my new career as a contortionist. As it turns out, a company called ARDI (505-766-9115) has developed Executor, a software emulator for Wintel machines that it claims runs 60 to 80 percent of Mac programs. Because ARDI's engineers reverse-engineered most of the Mac OS, Executor doesn't require Mac ROMs or a System file. I haven't tried it, but many readers said they were impressed by the free demo they downloaded from ARDI's Web site at <http://www.ardi.com>.

While we're revisiting the topic of using Mac programs and disks on the PC, I should mention a few other useful utilities. Conversions Plus from DataViz (800-733-0030, <http://www.dataviz.com>) translates most word processing, spreadsheet, database, and graphics files on high-density Mac floppies and any Mac SCSI media. For example, it can convert a ClarisWorks spreadsheet to a Lotus 1-2-3 document for use on a PC. If you want to read and write Mac disks on a PC without translating file formats, check out DataViz's MacOpener or Pacific Microelectronics' (800-628-3475, <http://www.netusa.com>) Mac-In-DOS.

Q How can I transfer a desktop pattern from one Mac to another?

A The easiest way to transfer a single pattern is to open the Desktop Pattern control panel, scroll to the pattern you want, then drag that pattern to the desktop, where it will appear as a picture clipping file. Copy this file to a floppy and drag it into the Desktop Pattern control panel on another Mac.

To transfer a lot of patterns, copy the Desktop Pattern Prefs file from the Preferences folder in the System Folder of your Mac, then open it and the "receiving" Desktop Pattern Prefs file from the other Mac with ResEdit. Double-click the ppat resource of each file to open their windows with thumbnails of each pattern sorted by ID number. Command-click to select the patterns you want from the source file, copy them to the Clipboard, paste them into the receiving file, and close both files to save your changes.

Q I have noticed that different Macs make different startup sounds. I don't particularly like the startup sound on my Performa, but I love the Quadra's. Is there any way I can change the Performa's startup sound without using a control panel such as SoundMaster (which is free for noncommercial use)?

A For the most complete collection of startup and crash sounds from different Macs, check out David Johnson's Web site The Mac Line at <http://www.rpi.edu/~johnsd10/macline>. You can download these sounds for playing on your own Macintosh (you may need a player/conversion utility such as Norman

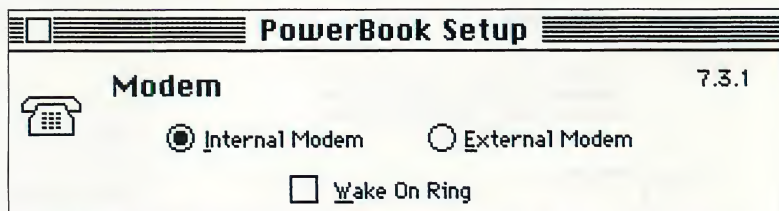
Franke's freeware SoundApp), but because startup sounds are burned into read-only memory, you can't change them. However, you can place a double-clickable System 7 sound file in the Startup Items folder in your System Folder and it will play when the Finder appears.

Q I recently installed a Level 2 cache in my Power Mac 7500/100, and now the computer won't start. Could the cache be the cause of this trouble?

A Absolutely. Either the cache isn't firmly seated in its slot or you may be one of the unlucky Power Mac 7500 owners affected by a problem Apple recently identified. According to Apple, a limited number of 256K L2 cache DIMMs (part numbers M3808LL/A and 661-1035) sold by Apple may not be compatible when installed in a Power Mac 7500. If you have an Apple-brand L2 cache exhibiting this behavior, contact an Apple-authorized service provider or call 800-767-2775 to request a free replacement under a repair program that terminates on May 31, 1997. If you have a third-party L2 cache with this problem, ask your vendor about repair or replacement policies.

Q My PowerBook is an insomniac. It sleeps for awhile but then wakes up on its own even though there are no open applications or Internet connections at the time that it wakes. Why can't it catch a little shut-eye?

A Check the PowerBook Setup control panel and make sure you deselect the Wake On Ring checkbox. If this checkbox is selected and your PowerBook's modem is connected to a phone line, the computer stirs itself from slumber whenever the phone rings so that you don't miss an important fax or e-mail.



IF THE WAKE ON RING checkbox is selected, your PowerBook may suffer from insomnia.

Owen W. Linzmayer (askaddict@aol.com), <http://www.netcom.com/~owenink>) is a San Francisco-based freelance writer and the author of *The Mac Bathroom Reader*. Please submit technical questions or helpful tips directly via e-mail or c/o MacAddict, 150 North Hill Drive, Brisbane, CA 94005.

April Fools'

Bonus

In the spirit of April Fools' Day, this issue's CD-ROM contains several classic practical joke programs from my book *The Macintosh Joker*. Have a blast playing tricks on your friends, but remember, paybacks are always worse, so please use these programs responsibly. Don't say I didn't warn you.

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powerplay

Mighty Marathon makers manufacture macabre multiplayer mayhem: Myth.

Teasers

MechWarrior II

Publisher: Activision
Contact: 800-477-3650;
<http://www.activision.com>

Upset that your mechs are flat, that there are never any clouds in the sky, that there are no ripples in the ground? Just wait. Activision has revamped Mechwarrior II to support QuickDraw 3D

RAVE. With the proper hardware, you'll have the 3D textures you've been jonesing for.

Quake

Publisher: MacSoft
Contact: 800-229-2714;
<http://www.wizworks.com/macsoft/homepage.html>

What's the big deal about Quake? Sure, it's "just" another first-person perspective shoot-'em-up, but this time, the monsters are composed of polygons, not sprites. And the nailgun is a kick in the pants—yes, it shoots nails.

Werewolf vs. Comanche

Publisher: NovaLogic
Contact: 800-858-1322;
<http://www.novalogic.com>

Werewolf vs. Comanche is two games in one—both are helicopter sims based on the same engine, but one's a U.S. machine and the other is Russian. Although the two helicopters are separate games, in a multiplayer scenario, you can play the Comanche against the Werewolf. Pretty nifty—but you definitely want a joystick (and possibly a throttle) to play.

Bungie Software released three games last year: Marathon Infinity, Abuse, and Weekend Warrior. While they all bear the Bungie logo, only the Marathon-level editors were developed entirely in-house: Abuse's original version was developed by Crack dot Com; Weekend Warrior was written by Pangea Software; and the Marathon Infinity scenario was created by Double Aught. We loved all three games, but we can't imagine that the creative team behind Marathon spent 1996 twiddling their collective thumbs.

Nope. They've been working on another genre-busting game: Myth. It's a tactical game, but unlike TacOps, for instance, action is in real time, not turn-based. Instead of a flat 2D board, or an isometric board as in Maxis' Sim City, the landscape is a true 3D object. And unlike Marathon, this game takes place in a fantasy realm, not outer space. Like most Bungie games, Myth will have great network games; Bungie will incorporate a metasever protocol into the game to find other players over the Internet.

To get the meat on Myth, we spoke with Jason Jones, Bungie's director of research and development.

MA: Why the return to a fantasy realm?

JJ: Fantasy is harder to pull off than science fiction. Most people think that a guy with a big gun and some robots and rockets flying around is cool, but those same people are skeptical of a guy swinging around swords. It's taken extra work to get everybody, even at Bungie, involved in the game. There's one guy here in particular who said, "Fantasy?...That's stupid!" It took his seeing the swords swinging, hitting somebody, and making blood fly out of him, and then a

grenade blowing up the guy that's attacking him, and flinging everybody through the air before he said, "OK, fantasy can be cool too."

MA: What is Myth's backstory?

JJ: The fantasy world cycles through good and evil over a period of a thousand years. At the beginning, a hero rescues the world from the clutches of evil and tyranny. And then there's half a millennia of light and happiness and goody-two-shoes. And then that same hero comes back, but as the destroyer instead of the savior. The player comes in at the end of the cycle to rescue the world from the last 500 years of plague and oppression.

MA: You'll run into opposition, of course?

JJ: The way you're going to turn the tide and bring the light back is by destroying that one guy who's been around for a thousand years—half of the time as the savior of the world and half of the time as the destroyer. When that hero banished the darkness himself a millennium ago, he destroyed a bunch of artifacts of great power, hid the ones he couldn't destroy, and entombed an entire evil race under the ground because he couldn't kill them—he just stuffed them away. He retrieves the stash 500 years later and uses it to tear down the world that he built 500 years before. Along the way he finds good guys and turns them to evil.

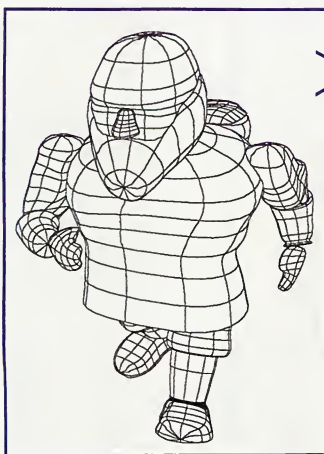
MA: Shouldn't the hero have killed the evil monsters at the start?

JJ: In Myth, most of the very powerful sorcerers can't be killed—cut them into pieces, bury them in wildly different places, pack them with salt, but eventually if somebody goes and digs them all up, they'll reanimate. So that's



Jason Jones

When things start going too fast, maybe it's time to break off and retreat, not slow the game and gain an unfair advantage.



"The sprites are pre-rendered on an SGI machine—they are very detailed 3D models with inverse kinematics and all those fancy SGI features. Then we render them out into bitmaps—that's what we use during the game so there can be 50, 60, or 100 people on the screen, whereas if they were built in polygons on the fly, we wouldn't be able to do that." Here we see the dwarf character from concept sketch to wire frame to full 3D.



games

what the anti-hero has done—
assembled around him six other people whom
he has bent to his will. They're the most powerful
sorcerers he's been able to find in the whole
world—these are the Pantheon of Fallen Lords.
When you clash with another army, it will be
under the direct control of one of the lords, such
as Soul Blighter or the Faceless Man.

MA: Do the Fallen Lords have different
fighting styles?

JJ: Not really as such, not like the Ancient Art
of War. The generals themselves will not...now
that I think about it, they will. For instance, the
Deceiver's great power is to control people's
minds. Two years ago, one of the big armies of
the light just vanished and nobody knows why.
They had met the Deceiver, who took over that
whole army. When you fight the Deceiver, you'll
be fighting troops that are about half dark and
half light. You'll end up fighting units that you're
familiar with as being friendly.

MA: Can you free them?

JJ: It's too late. Besides, that wouldn't be any
fun! In this part of the game, you have to fight
against the troops of light—you've learned their
strengths but not necessarily their weaknesses.
So when you get attacked by a bunch of (usually)
friendly units, it'll just be a kick in the butt and
you'll have to figure out tactics all over again.

MA: How does the game start?

JJ: You're in control of a smaller force, which
is part of a larger battle; you get a very small, very
specific mission. As you progress, your goals get
more general and your responsibilities get much
larger. By the end of the game, you have to march
east into the dark-controlled area through all
their armies. At this point, you have a giant army;
as you go east, it gets smaller and smaller as
things get worse and worse. If you play on a dif-
ficulty level that's matched to your skill, you'll
end up winning the game with two soldiers left.



MA: How do you win?

JJ: You have to behead the evil guy and carry
his head across a giant map, then throw it into a
hole called the Great Devoid. This causes a huge
explosion to come out of the hole, ending the
game. So out of this army of tens of thousands
you started east with—of course, you won't ever
have tens of thousands of people on your screen
at once—you'll end up beheading the anti-hero
and have just one guy to lug the evil Leveller's
head into the Great Devoid. It'll be one guy
saying, "Yeah, I won!"

MA: Can you describe the gameplay?

JJ: We're concentrating on the battle itself: the
fighting, the preparation, knowing where to dig
in, when to take the high ground, how to orga-
nize your guys. Terrain is important—from a tree
to a building to a hill—how you take advantage
of it to beat the other guy. It's the difference
between fighting with a couple hundred guys,
crushed together with limbs flying everywhere,
and building your town and scouting out the area
around you. Scouting is still really important, but

Spoilers



FIND Myth
previews and
Warcraft II
maps on
The Disc.

Here in the MacAddict offices, we haven't
even finished playing Warcraft II: Beyond
the Dark Portal yet, but we're sure you
have. We appreciate your tips on how to
get past dragons. Most of you recommend
upgrading archers to rangers and building
lots of guard towers. Figuring you're
panting after Starcraft, we decided to fill up
The Disc (well, not quite...) with scenarios
created by you and your fellow Warheads.

Here are a few map-making tips: Start
with a small canvas before you work your
way up to the 128 x 128 masses. Refine
your skills before attempting such a huge
(and time-consuming) undertaking. You'll
want to have a good idea of how you want
the landscape to look *before* you add even
one little-bitty island. Next, separate the
land from the sea, and remember that it's
much easier see the relationship between
land and sea without any mountains or
trees added to the picture. Once you've
gotten the land where it should be, be sure
to add enough resources to your map. It's
no fun trying to build archers when there
are no trees for your peasants to chop,
or gold for them to mine. Finally, be sure
you playtest your
map before you
release it to the Net to
make sure your map
is winnable!





A group of thralls are seen in three of the preset formations: circle, encirclement, and wedge. With the Java-like scripting language built into Myth, you'll be able to create more prefab maneuvers, reprogram monsters, or change the rate at which bits fly out of broken bodies.

resource management, such as cutting trees or building forms, isn't.

MA: Why not create a more resource-oriented game?

JJ: We had a couple of choices when we started the work on our next title at the beginning of 1996. We originally started to create the next generation of *Marathon*—it would have turned out to be something like *Quake*, and it wouldn't have been done yet, either. The other thing we thought of doing was a *Warcraft*- or a *Command & Conquer*-type game. I'm glad we did neither. We thought that both of those genres would become crowded in the next year or two. As it turns out, the real-time strategy genre has become downright polluted, not just crowded. It would be a mistake to be sitting on a *Warcraft* look-alike right now. We'd feel really stupid if we'd done that or a *Quake* game because so many other people are working on it. And *Quake* is done.

MA: What are the effects of being a more tactical than strategic game?

JJ: A typical problem with resource games is that once you have all the right guys chopping down trees or harvesting tiberium, you just want to turn the crank for five minutes to speed it up. Then when battle is joined, you have to slow it down to see what's coming. Because our entire focus is on combat, battle, attacking, preparing, executing, and winning those battles—whether they are little skirmishes or the final giant tying together of a couple hundred troops—the speed at which the game progresses is going to be suited for battle; That's probably too slow for a resource management game but just about right for the speed at which the armies fight.

MA: Will the player be able to slow the game anyway?

JJ: We're toying with not letting the player speed and slow the game because we don't want you to be able to slow it down when things get tough. The game is never going to get boring enough that you want to speed it up. We're trying to find that fine line where everything is just about right. When things start going too fast, maybe it's time to break off and retreat, not slow down the game and gain an unfair advantage. —Kathy Tafel



"The landscape is built out of polygons as the game is running. It has a dynamic shadow map on it, which lets the guys cast real shadows that go in the opposite direction of the sun; [they're] not just circles hidden under their feet. When a Molotov cocktail explodes, it lights the ground under it; when the little flaming pieces fly out of the Molotov, it lights those, too. When the lightning strikes it creates a light map. The dark wizard is constantly surrounded by this aura of swirling darkness as he moves around. That's all built in real time."

"Having more than 256 colors has a subtle effect. In a game that has only 256 colors, you'll see an enemy that has green in his cloak, and that green is going to be the exact same hue of green of the grass, and it's going to be the exact same hue in the eyes of this other monster: that's because you're in 8-bit. But in 16-bit, every green is different. You really have 32,000 colors, not just 256."

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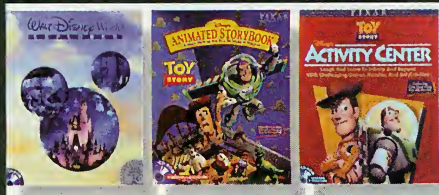
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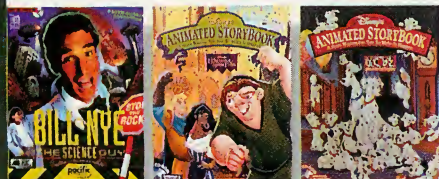
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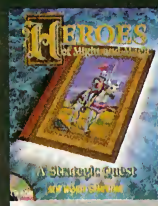
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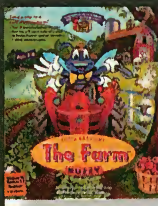


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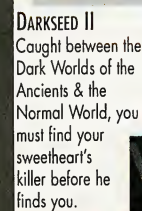
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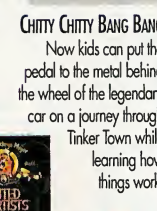
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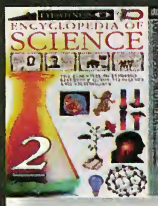
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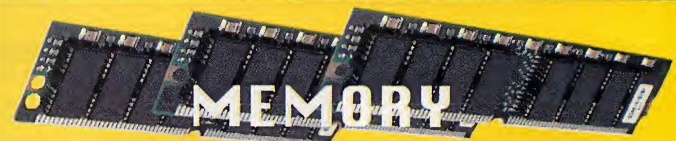
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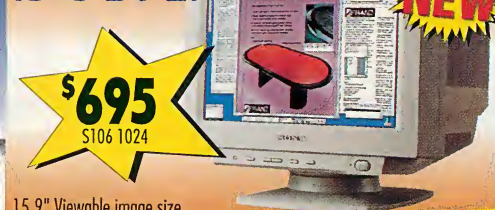
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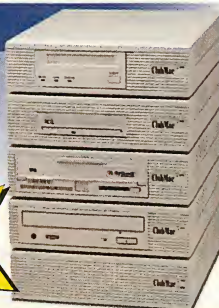
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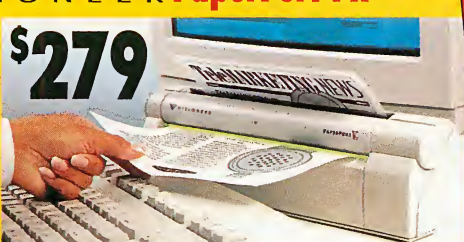
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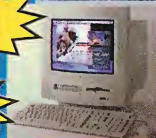
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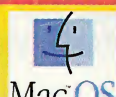
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APS Q 4300 Quantum Atlas II	4240MB 7200 rpm	\$999 ⁹⁵	\$1049 ⁹⁵
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APS ST 9000 Seagate Barracuda	8600MB 7200 rpm	N/A	2099 ⁹⁵

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Model	Capacity/Features	SR1000	SR2000
APS 230 MO	Up to 217MB	\$299 ⁹⁵	\$379 ⁹⁵
APS PD4	650 Phase Change / 4X CD-ROM	399 ⁹⁵	
APS 640 MO	606MB	599 ⁹⁵	
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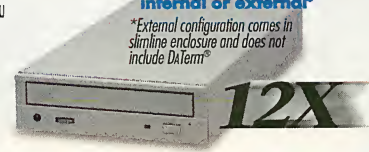
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Model	Capacity	SR 1000	SR 2000
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- Our multimedia enhancement option and our Epson PhotoPC content are now online, as promised in the magazine. You'll need the CD-ROM that comes with MacAddict to enjoy the one and to enter the other.
- RAM Doubler 2 is due to ship on August 7, amid the hurly-burly of Macworld Boston. Promised enhancements to Connectix Corp.'s RAM booster include memory tripling, faster compression and a control panel from which you can fine-tune its settings.

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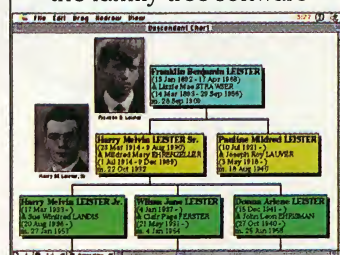
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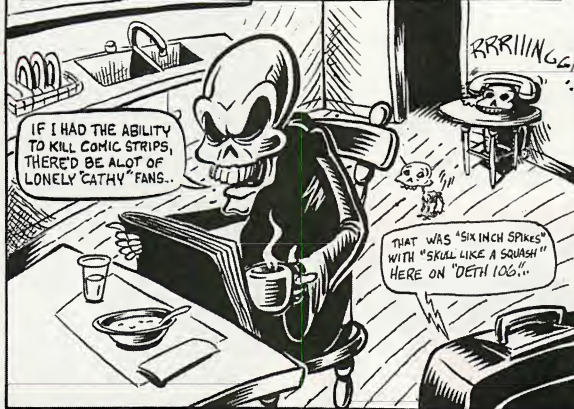
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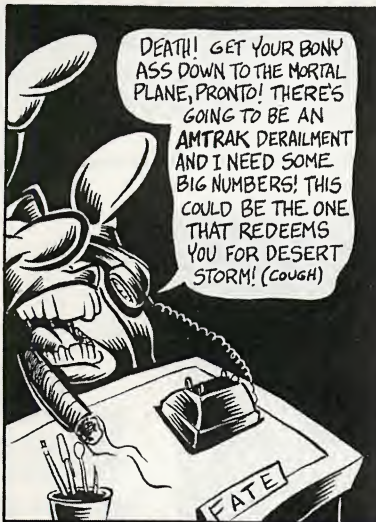
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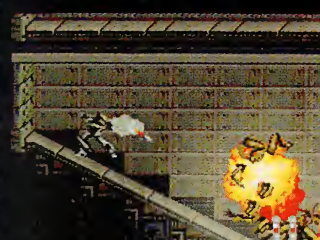
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